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# Pulp and Paper Production During July

## Paper Production, According to Identical Mill Reports to the American Paper and Pulp Association, Is Lower As Compared With May But Shows Considerable Increase As Compared With the Same Month Last Year—All Grades of Pulp Show Increase of 11 Per Cent For Month of July

### Pulp and Paper Production in July

According to identical mill reports to the American Paper and Pulp Association, paper production totaled 554,047 tons in July, 1929, as compared with 557,746 tons in June, 1929, and 495,272 tons in July, 1928.

### Increase Over Last Year's Record

All grades, excepting bag and wrapping papers, registered increases over last year's record in the month's output. Paper board production showed an increase of 18 per cent over July, 1928, and felts and building paper increased 17 per cent, hanging paper 23 per cent, tissue paper 22 per cent, writing paper 18 per cent, uncoated book paper 15 per cent and news print paper 2 per cent. Production of bag and wrapping paper, however, decreased in July, 1929, as compared with July, 1928, by 2 and 4 per cent respectively.

### Paper Shipments Increase

The July, 1929, shipments of all grades, excepting wrapping paper, increased over the July, 1928, records and the total shipments of all grades combined were 10 per cent above the corresponding total of last year.

All grades, excepting uncoated book, paper board, felts and building and hanging papers, registered decreases in inventory at the end of July, 1929, as compared with June, 1929. As compared with July, 1928, all grades, excepting paper board, felts and building and hanging papers, likewise showed substantial decreases in inventory. The total stock on hand for all grades decreased 1 per cent from June, 1929, and 8 per cent from July, 1928.

Identical pulp mill reports for July, 1929, indicated that the total production of all grades of pulp was 11 per cent greater than for July, 1928.

### More Pulp Consumed by Mills

During July, 1929, 14 per cent move ground wood, 23 per cent more easy bleaching sulphite and 13 per cent more bleached sulphite were consumed by reporting mills than in July, 1928. Shipments to outside markets in July, 1929, exceeded similar shipments made in July, 1928, by 46 per cent in Mitscherlich sulphite, 4 per cent in sulphate and 2 per cent in soda pulp. The total shipments of all grades of pulp in July, 1929, exceeded the July, 1928, total by 4 per cent.

All grades, excepting bleached sulphite, easy bleaching sulphite and sulphate pulp, showed decreases in inventory at the end of July as compared with end of June, 1929. As compared with July, 1928, all grades, excepting ground wood, bleached sulphite, and easy bleaching, registered decreases in inventory.

REPORT OF PAPER OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF JULY, 1929

| Grade | Production tons | Shipments tons | Stocks on hand end of month tons |
|---|---|---|---|
| News print | 111,578 | 112,616 | 23,603 |
| Book, uncoated | 84,685 | 84,452 | 38,319 |
| Paper board | 214,414 | 212,966 | 66,560 |
| Wrapping | 47,860 | 48,693 | 49,206 |
| Bag | 13,750 | 14,577 | 5,021 |
| Writing | 30,099 | 29,296 | 38,066 |
| Tissue | 12,693 | 12,480 | 9,807 |
| Hanging | 4,765 | 4,288 | 5,105 |
| Felts and building | 7,197 | 6,665 | 1,969 |
| Other grades | 27,005 | 28,022 | 15,744 |
| Total—All grades | 554,047 | 554,055 | 253,400 |

REPORT OF WOOD PULP OPERATIONS IN IDENTICAL MILLS FOR THE MONTH OF JULY, 1929

| Grade | Production tons | Used during month tons | Shipped during month tons | Stocks on hand end of month tons |
|---|---|---|---|---|
| Ground wood | 80,134 | 86,644 | 2,447 | 111,140 |
| Sulphite news grade | 36,747 | 34,113 | 3,216 | 7,092 |
| Sulphite bleached | 24,515 | 22,009 | 2,373 | 2,890 |
| Sulphite easy bleaching | 3,363 | 3,060 | 89 | 702 |
| Sulphite Mitscherlich | 7,034 | 5,920 | 1,149 | 585 |
| Sulphate pulp | 29,452 | 23,051 | 5,640 | 5,282 |
| Soda pulp | 24,300 | 15,680 | 9,064 | 4,274 |
| Pulp—Other grades | 29 | ..... | 19 | 19 |
| Total—All grades | 205,584 | 190,477 | 23,997 | 131,984 |

### Atmore Hopes To Get Paper Mill

ATMORE, Ala., September 16, 1929.—Indications that Atmore is being considered as a site for location of a paper mill have been received through an inquiry from the Pace Company, Chicago, as to natural supplies of pulp wood for such a purpose. The Pace Company is engaged in industrial and commercial research for manufacturing concerns though no hint was given as to the identity of its client in this instance.

The inquiry was directed to H. H. Patterson, of this city, who replied that there is the "best field for a paper pulp mill right in our immediate territory than perhaps any other section in the United States, assuming that pine wood is suitable."

Research by government foresters revealed that the area immediately east of the Alabama River from Pensacola to about 100 miles north of Atmore is perhaps the fastest growing yellow pine section in the United States.

### Now Pacific Waxed Paper Co.

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 14, 1929.—Pacific Paper Products Company, Tacoma, Wash., filed articles of amendment early in September changing its name to the Pacific Waxed Paper Company, and increasing its capital stock from $250,000 to $275,000.

# Pennsylvania Paper Mills Broaden Operations

## Fine Paper Specialties At Top Notch of Production—Manufacturers of Book Papers Steadily Employed—Distributors Experience Increased Demand For All Grades of Paper—Wrapping Paper Particularly Active—Krafts Move In Better Volume Than of Late

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 16, 1929.—Ever since Labor Day there has been a steady increase in demand for all grades of paper in this section. The wrapping paper dealers and those who carry specialized lines are the most active and are much gratified with the pleasing turn which has come to the market within the past week. Krafts are moving in better volume but still lack the snap customary at this season. Gummed tapes are active and firm. The trade was given evidence of the firmness of tissue paper when it was notified by the manufacturers that there would be slight advances in the price of the cheaper grades. The building situation gives little encouragement to the manufacturers of sheathing papers. Roofings are in fair demand and builders' papers are steady.

Local paper mills are broadening their operations. Fine paper specialties keep the producers of fancy grades at top notch of production. Manufacturers of book papers are steadily employed. There is a good order list for two and three ply papers in the finer grades. Card boards used by the printing and manufacturing stationery trades are moving briskly.

### Paper Trade Golf Tournament

As trade associates get down to business and vacation pastimes are forgotten there is another lure to outdoor life in the annual golf tournament which will be held at the Manufacturers Country Club, Ireland, Pa., on September 17 and 18. The meeting on the links will bring together members of the Philadelphia Paper Trade Association and its fraternity from trade groups in New York, Boston, Baltimore, Chicago and other large cities. On Tuesday qualifying rounds will be played in the morning while the afternoon will be given over to match play classes. The beaten four will play for the consolation prize on Wednesday morning while the championship final round is to be featured in the afternoon of that date. The committee in charge of the golfing tournament is: E. A. Weihenmayer, Irwin Megargee, Allen E. Whiting, David Lindsay, Jr., and A. B. Sherrill.

### Paper Trade Association Meets

Members of the fine paper division of the Philadelphia Paper Trade Association met at the Benjamin Franklin Hotel last Wednesday to initiate the first Fall session in entirely new surroundings. While the full quota of members were not present and no routine business was taken up a social time was spent in discussion of the trend of business for the Fall. Vice President W. S. Wilcox presided and President Simon Walter was in attendance. The quarterly meeting of the association, which will include a joint session of the fine and wrapping paper dealers, is scheduled to be held on Friday, September 20, at the Benjamin Franklin Hotel. This meeting will be devoted to the usual quarterly business discusions and routine reports of the past three months.

### Thomas W. Price Co. to Hold Outing

When the Thomas W. Price Company, 503 Ludlow street, holds their annual outing on September 28, special tribute will be paid to two associates of the company who have been identified with the business for half a century. Those who will be signally honored on that occasion are Thomas R. Fort, Jr., sole owner of the business, and John Baker Tuttle, who has been linked to the staff for fifty years in an executive capacity. Mr. Fort joined the firm half a century ago in a financial capacity when it was owned by the late Thomas W. Price. He rose to be the present sole owner of the business. When the Vici Club meets in its annual gathering at the Brookline Square Country Club at Brookline, near Philadelphia, tokens of esteem and honor will be conferred on the two members whose long association has won the loyalty of their fellows and appreciation of the staff will be shown in the bestowal of a gift commemorating the occasion. There will be a program of sports and indoor games and a dinner to be served at the club with the Vici Club members joining in the many diversions planned. The Vici Club is the social organization of the Thomas W. Price Company and its president is John F. Levick, who is chairman of arrangements.

### S. D. Warren Co. Convention

Those members of the Philadelphia Paper Trade who are linked with the distribution of S. D. Warren Company's papers journeyed to Poland Springs, Me., last week to attend the annual sales convention held at the mills of that concern. The members of the Quaker City forces who attended the convention were: President George W. Ward, of the D. L. Ward Company, 28 South 6th street, and his associate, Vice President William A. Hentz; and from the Charles Beck Paper Company, another local distributor, Vice President Andrew Simon, Sales Promotion Manager C. W. Bond, and G. P. Johnson, of the sales staff.

### Bayless Mfg. Co. to Continue Production

Although the Philadelphia trade had recently been informed of the receivership of the Bayless Manufacturing Company, of Austin, Pa., it was last week notified that the manufacturers of wrapping papers would continue to operate. An announcement sent to the dealers from New York headquarters last week stated that the Bayless Company's financial difficulties were occasioned by the inability to secure sufficient wood pulp to meet its needs owing to delay in shipments of that raw material. However, the announcement stated that the firm will not withdraw from the manufacturing of the products it has heretofore produced and is going ahead in keeping with its former business policies. The receivers appointed to conduct its affairs are S. C. Bayless and V. R. Hann.

### William J. McGarity 3rd, Arrives

Trade congratulations are being extended to the younger member of the wholesale paper stock house of the Penn Paper and Stock Company, 240 North Delaware Avenue, William J. McGarity, Jr., on the arrival of the third member of the family to bear that name. William J. McGarity, 3rd, arrived on September 9 and his grandfather, William J. McGarity, Sr., head of the firm, and secretary of the Philadelphia Wholesale Waste Merchants Association, proudly proclaimed his advent to the paper trade.

### Wilcox, Walter, Furlong Co. at Cantine Convention

Members of the Philadelphia distributive house of the Cantine papers, the Wilcox, Walter, Furlong Company, will journey to Saugerties, N. Y., on September 18 to participate in the annual sales conferences and convention which will be held by the Martin Cantine Paper Company at the mills in that town. Those who will take part in the annual meeting as representatives of the sole distributive house in the Quaker City trade are Edward T. Walter and Thomas Furlong.

### W. C. Hamilton & Sons at Top Notch Production

As the members of the staff of the W. C. Hamilton & Sons mills at Miquon, near Philadelphia, are preparing to greet the president of the company, Howard W. Taylor, on his return from Europe, September 23, the manufacturing schedule is kept at top notch speed to meet an unusually active market. When President Taylor returns to his desk after a six week sojourn abroad he

will find that the mills are well sold ahead on such finishes as ripple, hand made and linen papers, made under the Hamilton brands. There has been a broad demand for the Hamilton stock lines, such as Cloud Weave, Victorian and Kilmory papers, and other book grades and announcement stocks and orders are in excess of production for the next few weeks. Since placing the new pasting machine in operation the Hamilton company has been obliged to operate it on 24 hour schedule, its needs for two and three ply papers necessitating that speed of production.

## Floating Wood to National Plant

CARTHAGE, N. Y., September 14, 1929.—The National Paper Products Company is carrying on extensive logging operations and for the first time in several years booms have been spread on the Black River above the railroad bridge to catch the logs carried along the bank of the river to the firm's plant. About 2,000 cords of wood are at present being floated to the pulp pile on the company's land south of the tissue mill. The wood was purchased by the National Paper Products Company two years ago from the firm of Millard & Rice, of Copenhagen, and is now being floated from the scene of logging operations down the Deer River into the Black River where it is chained into floats and towed to the mouth of the boom near the State bridge. The contract called for the delivery of the wood at this time last year but low water in the creeks held up the delivery until this year.

The entire cordage of wood is mostly spruce and this method of delivery was selected due to the fact that the wood was being cut at considerable distance from a railroad siding. The booms were placed along the east bank to hold the wood by the lumbering firm and following the conclusion of the delivery they will be towed up the river again. Two years have elapsed since any wood has been floated into the booms near the St. Regis Paper Company's plant on the west bank of the river which was the most recent scene of operations. The floating of logs into the river was concluded several years ago when a broken boom caused a serious log jam at the railroad bridge and the loss of thousands of cords of wood when it was straightened out. The delivery of the 2,000 cords of wood at the National Paper Products plant will conclude the logging operations unless a further order is placed with concerns up the river. For the past several years logs have been brought to the storage pile adjoining the plant by railroad cars. The storage pile is located directly above the state dam and situated in a way as to allow for the ready removal of the logs now being floated down the river.

## News Print Production for August

Production of news print in Canada during August, 1929, amounted to 225,873 tons, and shipments to 224,254 tons, according to the News Print Service Bureau. Production in the United States was 120,868 tons and shipments 118,789 tons, making a total United States and Canadian news print production of 346,741 tons and shipments of 343,043 tons. During August, 22,758 tons of news print were made in Newfoundland and 1,544 tons in Mexico, so that the total North American production for the month amounted to 371,043 tons.

The Canadian mills produced 220,049 tons more in the first eight months of 1929 than in the first eight months of 1928, which was an increase of 14 per cent. The United States output was 14,612 tons, or 2 per cent less than for the first eight months of 1928. Production in Newfoundland was 15,770 tons, or 10 per cent more in the first eight months of 1929 than in 1928, and in Mexico, 1,975 tons more, making a total increase of 223,182 tons, or 8 per cent over the same period in 1928.

During August the Canadian mills operated at 80.5 per cent of rated capacity, United States mills at 79.8 per cent, and Newfoundland mills at 107.0 per cent. Stock of news print paper at Canadian mills totaled 29,785 tons at the end of August and at United States mills 25,656 tons, making a combined total of 55,441 tons, which was equivalent to 3.5 days' average production.

## Standardization of Printing Papers

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 16, 1929.—More than 2,500 invitations have been sent out to paper producers, distributors and users by the Division of Trade Standards, Department of Commerce, to attend the preliminary conference to be held at the Bureau of Standards on October 2 on the standardization of record and printing papers. At the conference the question of both grade and quality will be discussed, it is stated.

"Pursuant to suggestions from the National Association of Purchasing Agents and the American Paper and Pulp Association," says I. J. Fairchild of the Division of Trade Standards in his invitation, "there will be a preliminary conference October 2, to determine consumer and distributor demand for the establishment of commercial standards covering service and permanence of record and printing papers, including the following fine papers: blotter, bond, book, bristols, post card stocks, coated boards, cover papers, envelopes, ledgers, mimeograph, offset, manifold, and safety bond stock.

"Consumers and distributors are particularly requested to bring, or submit in writing, a list of their major paper requirements in this field with brief statement of purpose, service, and permanence for each grade, without reference to fiber content."

Following is the program which has been worked out for the conference:

Opening Remarks—Dr. George K. Burgess, director, Bureau of Standards.

Standardization of Paper from the Consumers' and Distributors' Points of View. The discussion for each group will be led by the gentlemen indicated—

(a) The Bankers' Need for Standards of Paper Quality—Raymond E. Flynn, Union Trust Company of Detroit.

(b) Quality Standards for Paper for Public Utilities—Lewis A. Jones, New York Power and Light Corp.

(c) Paper Standards for Insurance Companies—Leo H. McCall, New York Life Insurance Company.

(d) Investment House Requirements for Paper—James W. King, Electric Bond and Share Company.

(e) Industrial Users' Paper Requirements—H. M. Werntz, Westinghouse Electric & Manufacturing Company.

(f) The Educational Buyer's Paper Requirements—Theo. M. Johnson, New York University.

(g) How Standardization of Paper Will Simplify the Purchasing Agent's Work and Increase His Efficiency—G. H. Renard, Sec., National Association of Purchasing Agents.

(h) The Department Store Interest in Paper Standardization—H. P. Pitcher, R. H. Macy & Co.

(i) The Value of Paper Standardization to the Printer—W. H. Walling, Mortimer-Walling, Inc.

(j) The Value of Paper Standardization in Handling City and Country Trade—Wm. H. Rourke, The Rourke-Eno Paper Company.

(k) Economic Value of Paper Standardization in the Distribution of Paper in Metropolitan Centers—Oswald F. Marquardt, Marquardt, Blake & Decher, Inc.

Action of Conference on Development of Commercial Standard.

Appointment of Committee of Producers to Prepare Preliminary Draft of Specifications.

The American Standards Association's Procedure in Approving a Commercial Standard as an American Standard—F. J. Schlink, American Standards Association.

Set time for next conference.

## W. S. Woodson Now With Mechanical Rubber Co.

W. S. Woodson, Jr., formerly chief chemist of the Albemarle Paper Company, is now superintendent of the fiber mill of the Mechanical Rubber Company, of Cleveland, Ohio.

# Ontario Paper Manufacturers Well Employed

## Demand For Book Papers Remarkably Well Maintained—Coated Stock Mills Continue Very Busy—Slight Falling Off Experienced In Request For Fine Papers, Including Bonds, Ledgers and Writings—Kraft Paper Plants Active—Prices Steady In All Lines

[FROM OUR REGULAR CORRESPONDENT]

TORONTO, Ont., September 16, 1929.—While manufacturing activities in paper circles in Ontario continue on a satisfactory basis, there are some spotty sections in the distributing end of the industry. Uncertainty as to the outcome of the crops in the Canadian West and the knowledge that in any event they will be below par, has slowed business down materially throughout the province and the paper industry has been more or less affected. Consumers are not making large commitments and for the most part are hesitant when it comes to the matter of stocking. The printing and lithographing industries, while admittedly fairly busy, are not stocking ahead to any extent, and in many instances printers have their jobs locked up before they place their order for paper. Other consuming sources, however, are placing numerous small order business and the total is stacking up fairly well. It is generally believed that now the Canadian National Exhibition is over and the holiday season drawing to a close the wholesale paper industry will settle back to normal and that the fall will produce some really good business. The outlook is acknowledged to be bright and in another few weeks the distributors will be able to handle all the mills can turn out. Prices in all lines are holding firm and with the exception of the board price revision recently announced quotations on paper products are unchanged.

Generally speaking the manufacturing end of the paper industry is active and well employed although there has been some falling off during the summer months in demand for fine papers, such as bonds, ledgers and writings. On the other hand the demand for book papers has kept up remarkably well and there is also a good call for coated stock, the mills in that line being quite busy. The converting trade continues to improve its position somewhat and there is a good call for envelopes and general stationery lines. Coarse paper mills are not so busy as they might be, although there is a disposition on the part of the buying public to place rather larger orders for wrapping paper and bags than was the case a while back. The demand for kraft paper keeps up well and manufacturers of glassine, grease proof and waxing papers are getting some good business. The board mills are fairly busy but the paper box manufacturers report trade as rather spotty. They have not had as good a summer as was anticipated but are in hopes that the Christmas output will run the total of the year's business close to that of 1928, which was a banner year in the Canadian paper box industry. Most of the plants are now engaged in making samples and some stock for the coming Christmas trade.

### Enlarging Dryden Kraft Capacity

A new kraft machine for Dryden Paper Company, Dryden, Ont., which will increase the capacity of the company's present equipment by 50 per cent., is about to be purchased. The contract is not yet let, but it is understood that the company plans to install the machine and have it ready for operation by the middle of next summer. At the present time Dryden Paper is producing about 15,000 tons of kraft annually. Its sulphate pulp mill, however, has an annual capacity of 25,000 tons. Presumably the new kraft machine will bring the company's output of finished product into line with its production of sulphate pulp. Although no official statement is available as to the projected capacity of the new machine it is thought that output from it will run about 7,500 tons annually. In view of the capacity of the company's sulphate mill, a 10,000 ton mill could be handled, but as the company markets some of its sulphate pulp in the bordering state of Minnesota and thereabouts, it is unlikely that the kraft mill will be stepped up immediately to the full limit of capacity. This new move on the part of an organization which only a short time ago was laboring under a receivership is a further indication of the strides the company has made in the past year or two. Dryden has had a steady and growing market for its products in the west and it is the expansion of this general market that has necessitated the move toward expansion. It is well known, of course, that over 70 per cent of the company's present output is sold under contract to the Bates Valve Bag Company, so that the new addition will increase the company's capacity to serve its general market by nearly 190 per cent.

### Agreement Among Paper Board Mills

Paper board manufacturers in Canada have come to an understanding which is expected to do away with needless competition of a type that has been adversely affecting earnings. Conditions in this branch of the pulp and paper industry have developed much along the same line as in news print. While the demand for paper board has been growing steadily and consumption on a per capita basis is still below that of the United States, new installations have apparently been rather too rapid. Consequently the paper board manufacturers have gone after new business, which has been secured, apparently, too frequently, at a price which does not permit of much profit. It was obvious that this state of affairs could not continue. Last week a meeting of paper board manufacturers was held in Montreal at which the Ontario manufacturers were present, and conclusions were arrived at which should bring about a better feeling in the industry. It is understood that much of the talk centered around sales practices. During the last eight years production of paper board has forged ahead. In 1921 only 89,114 tons were produced, but as this was the first year of the post-war depression it cannot be taken as a normal output. But in each of the following years output advanced and in 1927 production totalled 161,497, the highest point ever reached by this branch of the paper industry. Returns for last year, which are not yet available, will likely show a further increase.

### Notes and Jottings of the Trade

It is reported that the Martin Paper Products Company will commence the manufacture of corrugated and solid fiber paper boxes and other paper products at Winnipeg in the near future. The president of the new concern, John Martin, who formerly carried on the John Martin Paper Company, Ltd., with various branches in the West, was in Toronto a few days ago, and confirmed the report that his organization was contemplating such a move. The head office is to be in Winnipeg and it is expected that the new plant will be in operation in October next.

A visitor to Toronto this week was S. J. Robinson, of B. J. Ball, N. Z., Ltd., wholesale paper merchants of New Zealand, who visited a number of the Toronto paper houses after an interval of five years.

Widely known to the Toronto paper trade, Ernest R. Hewitt, secretary of the Dominion Ink and Color Company, died at his home in that city at the age of fifty years. Deceased had been ill for some time. He was prominent in church and fraternal circles in Toronto.

E. C. Stovel, of the Stovel Company, printers, Winnipeg, was a recent caller on the paper trade in Toronto.

A meeting of the western group of the Ontario Pulp and Paper Makers' Safety Association was held in the city hall at Fort William, Ont., recently, at which safety matters in the pulp and

paper industry generally, were discussed. Among the speakers at the gathering were A. P. Costigane, secretary-engineer of the association; H. J. Halford, vice-chairman of the Workmen's Compensation Board, and Mr. Miller, chief sanitary inspector.

The Don Valley Paper Mills, Ltd., Toronto, were closed down recently for a few days in order to facilitate the rebuilding of the beater room and the installation of a new drying system and other equipment.

Building of new offices at Port Arthur, Ont., for Provincial Paper, Ltd., is in progress and will be ready for occupancy in a few weeks time. Of concrete and brick construction, the building is two stories and basement. It will be connected with the mill by a covered overhead bridge approach, and its dimensions are 45 by 85 feet. The basement will house the first aid room, a large assembly hall for employees and a large storage vault. The first floor will be devoted to general offices. The cost will be $50,000.

Don Valley Paper Mills, Ltd., Toronto, is bringing out a new line of fancy cover paper under the name of Don Juan. This will be carried in five colors, blue, gold, green, brown and India, as well as in white. It will be carried in Ontario exclusively by United Paper Mills; in Montreal by J. B. Rolland et fils, and by the Kruger Paper Company in Quebec City. In the Prairie Provinces the new line will be handled by the Midwest Paper Company.

Chatham Phenix National Bank and Trust Company, of New York, in a writ issued at Osgoode Hall, Toronto, is suing Laura T. Whalen, of Port Arthur, Ont., executrix of the last will of the late James Whalen, prominent Canadian pulp and paper manufacturer who died some months ago, for $290,379. The claim is for the amount of a promissory demand note with interest thereon, made by the late Mr. Whalen, T. W. McGarry and P. F. Cole, in favor of the plaintiff bank, of which the plaintiff is the holder. The note, dated September 11, 1923, was for $215,000. Cash to the amount of $1,334.34 is said to have been paid on it. Interest claimed to date amounts to $76,713.

Many in the paper industry in Canada and the United States were interested in the announcement of the marriage in Norfolk, Va., of Miss Lang, of Barrie, Ont., to S. J. Moore, of Toronto, president of the Bank of Nova Scotia, and director of a large number of companies, including the Dominion Paper Box Company, Toronto, the Pacific Burt Company, Fanfold Company, and the F. N. Burt Company. Mr. Moore is now 70 years of age. He is a widower and the bride gave her age as 65 years. The ceremony took place at Norfolk, where Mrs. Charles Bragge, a daughter of Mr. Moore, resides. Miss Lang is a cousin of Mr. Moore by his former marriage. For years Mr. Moore has made his home in Parkdale, at King street and Jameson avenue, Toronto. His first marriage took place at Barrie in August, 1878.

A. C. Hunt, of the Midwest Paper Company, Ltd., Winnipeg, was a business visitor in Toronto during the past week, having motored through from the Manitoba capital.

Louis Lemieux, of the Canadian Pulp and Paper Association, Montreal, was in Toronto last week. Mr. Lemieux is liason officer between the association and the Dominion Government's customs department in connection with the paper trade and has been doing some good work in securing fair rulings from the department in respect to interpretations of the Customs Act.

As a member of the entertainment committee looking after the nineteen members of the United States Army First Pursuit Squadron from Selfridge Field, Detroit, last week, Capt. C. Ernest French, of the Toronto office of the Howard Smith Paper Mills, put in several busy days. The squadron, together with a number of machines from the Royal Air Force at Camp Bordon, Ont., were guests of the Toronto Flying Club and the Canadian National Exhibition while in the city.

The King Paper Box Company, of Montreal, has just completed a large addition to their plant which is now in operation in the manufacture of folding and set up boxes.

The many friends in the paper box industry in Ontario of J. J. Small, Gurlph, Ont., president of the Canadian Paper Box Manufacturers' Association, will be pleased to learn that he is recovering after a lengthy illness.

Neil Powter, attached to the Howard Smith Paper Mills Toronto office from the advertising department in Montreal, was greatly in evidence at the Canadian National Exhibition which has just closed and where he demonstrated Howard Smith papers in connection with a printing exhibit.

## Fir-Tex Company To Start Construction

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 14, 1929.—Following a meeting of the board of directors of the Fir-Tex Insulating Board Company on September 12, announcement was made that work would begin at once on a new $2,500,000 plant at St. Helens, Ore. The first statement regarding this plant and the organization of the company was made a number of months ago, since which time financing and other arrangements have been under way.

Contract for construction was awarded to the J. F. Shea Company of Portland. It is planned to have the mill in operation by early spring. At the start 250 persons will be employed, the products of the plant to include insulating and building board and a pressed board.

The Fir-Tex product is made by the disintegration of wood fibers, the entire bark content of any wood having fiber being used, but these woods will be chiefly fir, hemlock and spruce. The potential market for building and insulating board is estimated as about 30,000,000 square feet a day, while at present less than 2,000,000 feet a day is being manufactured.

The plant will be located on a tract comprising about 175 acres which is considered well adapted to the needs of the company as it has a solid rock foundation and a water frontage of 2,700 feet. Advantages of both water and rail shipping and a paved highway are included in the location.

St. Helens is a rapidly growing town of about 5,000 and is one of the largest lumber ports on the Columbia River. It is so close to Portland that the through freight rates are the same as those from the larger city.

It is said that the Tom G. Taylor Company, financial agents for the Fir-Tex Insulating Board Company, have made many advantageous connections in the sale of the securities which will tend to market and distribute the product most economically.

Charles E. Dant, of Dant & Russell of Portland, is chairman of the board. Other members are:

Herbert Fleishhacker, president Anglo-Paris National Bank, San Francisco; Lee A. Phillips, executive vice-president Pacific Mutual Life Insurance Company, Los Angeles; John S. Baker, president Fidelity Trust Company, Tacoma; Kenneth D. Dawson, president States Steamship Company, Portland; J. A. Jevne, president H. Jevne Company, Los Angeles; Paul H. Helms, chairman executive committee, First National Corporation, Beverly Hills, Cal.; Stanley S. Anderson, Investments, Beverly Hills; E. B. King, president King Lumber Company, San Francisco; Franklin T. Griffith, president Portland Electric Power Company, Portland; H. F. McCormick, chairman of the board St. Helens Pulp & Paper Company, St. Helens, Ore.; Charles A. Shea, J. F. Shea Company, Portland; William B. Dean, general manager Diamond Match Company, Chico, Cal.; A. E. Millington, vice-president and general manager Fir-Tex Insulating Board Company, Portland; Tom G. Taylor, investment securities, Portland.

## Puget Sound Pulp Co. Lets Contracts

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 14, 1929.—The Puget Sound Pulp and Timber Company has awarded contracts on general construction of its new plant at Everett, Wash., according to Ossian Anderson, president of the company. Isaacson Iron Works has the structural steel, and Albertson & Cornell Bros., Tacoma, have the general contract.

# Paper Demand Moderately Active in Chicago

## Conditions In Fine Paper Market Satisfactory. With Prices Stable and Future Prospects Decidedly Encouraging—News Print In Excellent Request, With Circulations Increasing and Advertising Volume Expanding—Book Paper Situation Rather Weak

[FROM OUR REGULAR CORRESPONDENT]

CHICAGO, Ill., September 16, 1929.—Mixed conditions prevail in the Chicago Paper market according to reports received today from various sources in the city. It is reported that low prices are somewhat prevalent in the wrapping paper market. Ground woods are reported to be in fairly good shape with demand rather brisk. Book papers have slowed up somewhat in the past week and the market is characterized as rather weak. Krafts may be a bit weaker before the surplus existing in that market is worked off.

Business conditions in general are steady as a rule. In the fine paper market, particularly, demand is going ahead in good shape, the price condition is stable and a good grade of optimism prevails. The board market is still confronted with price cutting that may work itself out as demand increases. News print continues to go along in good shape as publications are increasing in circulation and in advertising volume. The market is steady. Activity is noted in the lower grades of waste papers.

### J. L. Palmer to Address Paper Salesmen

J. L. Palmer, associate professor of marketing, School of Commerce and Administration of the University of Chicago, is to be the feature speaker at the semi-annual meeting of the Salesman's Association of the Paper Industry to be held in conjunction with the National Paper Trade Association, slated for Chicago on October 8 and 9. The salesmen's meeting will be on October 8, Professor Palmer's subject being "Present Day Trends in Marketing." This luncheon event will draw an unusually large crowd composed not only of salesmen but of executives in other lines as well.

President Harold Knott of the Chicago division of the Salesman's Association foretells a big year for this division. The complete program of speakers for the weekly meetings at the Hamilton Club has not been made public but a goodly number of men well known in their respective lines are sure to appear. Plenty of excitement is also being stirred up over the last big golf event, September 19, at the Wilmette Country Club. Aside from matching cards with salesmen from other divisions for the President's trophy and for the Harbison Cup the salesmen will be shooting their heads off for a gala array of additional prizes. A big crowd is sure to greet Chairman Tom Donahue's last golf effort of 1929.

### News of the Trade

Members of the Chicago Paper Association were much pleased last week to learn that the firm of Stevenson, Harrison & Jordan, engineers, had been secured to act in an advisory and secretarial capacity for the association for the coming year. The contract with this firm expires October 1. It was renewed at the meeting of the association held at the Bismarck Hotel last Tuesday, September 10.

The Bryant Paper Company of Kalamazoo, Mich., has appointed the Ellis T. Gash Agency, 840 North Michigan avenue, Chicago, to handle its advertising account for the coming year. Business publications and direct mail will be used in advertising the Bryant Paper Company's line of finished papers.

Tattershall's, Inc., 515 South Wells street, Chicago, has sent out an attractive piece of literature advertising a new line of Majestic Folding Enamel, made by Allied Paper Mills. A big four page broadside describes Majestic as a "beautiful clear white sheet with perfect folding and printing qualities." A striking example of its use in color reproduction is obtained by the illustrations of several colored flowers.

Good news to paper manufacturers is found in the continued strong efforts of the Bureau of Envelope Manufacturers of America, to increase the consumption of good envelopes. A big folder broadside from the Gaw-O'Hara Envelope Company, 500 North Sacramento boulevard, Chicago, contains not only a description of that company's line but also a story from the bureau impressively discussing the reasons for using good envelopes. Here is one excellent example of a way to build up a consumer market.

A price list specifying coated papers only has been sent out from the West Virginia Pulp and Paper Company offices in the Pure Oil Building. Dated effective September 10, the list carries price list and description of Extra No. 1 Enamel C. 2 S. White and No. 1 Enamel of the same. Also Enamel C. 2 S. White and India and Folding Enamel C.2 S. White, Litho C. 1 S. White and Enamel Cover C.2 S. White and India.

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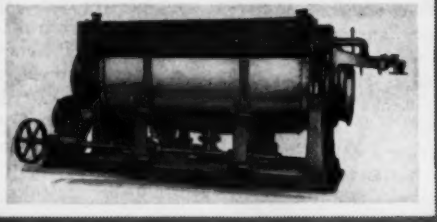
### Western Forest Fires Entailing Great Loss

The critical forest fire situation in the Western National Forests is somewhat improved but still far from satisfactory, according to reports received in Washington to-day by the Forest Service, United States Department of Agriculture. In northern Idaho, where raging forest fires were rapidly approaching disastrous proportions a few days ago, cool weather with some rain has given some temporary relief. In spite of this change, 4,900 fire fighters are rushing work to make the many large fires safe from further outbreak in anticipation of the possible recurrence of dry weather. In Washington and Oregon, where several large uncontrolled fires are being fought by hundreds of men, the weather remains hot and dry with no relief predicted. In California the weather has become more favorable to the work of fire control and no large fires are now burning.

More than $1,000,000 has been spent by the Forest Service in the last three weeks in fighting forest fires, and in the fire season more than 500,000 acres have been burned over in the Western National Forests. In the six Western National Forest Districts, comprising the Rocky Mountain and Pacific coast region, there have been in that period 5,025 separate fires, 3,016 of which have been caused by lightning and 2,009 by human agency.

"Lightning fires have been unusually troublesome this year," says E. A. Sherman, acting chief of the Forest Service in the absence of Maj. R. Y. Stuart, who is in the West studying National Forest needs with the agricultural subcommittee of the Appropriations Committee of the House of Representatives. "Fires caused by human carelessness are unnecessary and will be eliminated by education and law enforcement. Bunched lightning fires, sometimes running to 300 or 400 separate fires set by one dry electrical storm, will always present the risk of disaster unless adequate means are provided to cope with them. This means especially a complete system of roads and trails throughout the National Forests, including especially the now almost inaccessible country where lightning strikes most frequently. It means, secondly, an available trained force of fire guards sufficient to strike immediately the maximum number of fires set by any electrical storm. Only by such means will it be possible for the Government to avoid the recurrence of such destructive and costly disasters as we have had this year. The Federal Forest Protection Board, composed of representatives of all Federal agencies concerned in the problem of forest protection, shares the Forest Service viewpoint on the forest fire situation."

# MACHINES LIKE YOURS—



Right now machines like yours are turning out paper like yours to sell in the same market.* But they get their stock just as clean, faster and cheaper—through Bird Screens. They have the edge, right from the start, unless you have Bird Screens, too.

May we submit a layout and an estimate of savings?

BIRD MACHINE COMPANY
South Walpole
Massachusetts

*Two-thirds of the paper made in North America passes through Bird Screens.

BIRD MACHINE CO.

# International Secures More Timber Holdings

## Transfer to be Consummated Shortly of Lands of New Brunswick Railway Co. In North West New Brunswick—Property Comprises Large Areas In Counties of Madawaska, Victoria, Carleton and York—Vast Extent of International Paper Co.'s Pulpwood Resources

[FROM OUR REGULAR CORRESPONDENT]

MONTREAL, Que., September 16, 1929.—From St. John, N. B., comes the news that the expected transfer of the lands of the New Brunswick Railway Company in northwest New Brunswick to the International Paper Company is to be consummated in the near future.

This will comprise one of the largest lumbering transactions in the history of the province, the property consisting of a large area in the counties of Madawaska, Victoria, Carleton and York with a price said to be around the $8,500,000 figure. Heavy timber growths occur on these lands and it is understood that the transfer will include the soil rights.

Discussions as to the deal have been proceeding for some time and it is believed that International company has had an option on the property which it now proposes to take up. If and when this is done the company will have a vast area of timber lands in New Brunswick for the purpose of supplying their new mills in New Brunswick.

This news is a reminder of the vast extent of the pulpwood resources of the International Paper Company. A recent official estimate put the company's total resources at 17,375,335 acres, containing 68,457,000 cords of pulpwood, with a book value of $26,906,797, after deduction of depletion charges, which in some cases have accrued for many years and reduced the book value to a nominal amount. Of this total by far the largest portion is in Canada and Newfoundland. In the United States the company owns freehold 1,704,553 acres containing nearly 7,000,000 cords of pulpwood. In Canada and Newfoundland it owns freehold 2,165,274 acres containing 8,180,000 cords of pulpwood, and leases Crown limits to the extent of 13,445,08 acres, containing 53,282,000 cords. An idea of the tremendous area of the company's pulpwood limits can be gained by comparison. For instance, the total land and water area of the State of New York is 31,470,350 acres. Thus the company's 17,375,335 acres of pulpwood limits represents an area more than half the size of New York State.

### Forestry Research Bureau for Quebec

The Hon. Honore Mercier, Minister of Lands and Forests for the Province of Quebec, has announced that in the near future the Provincial Government will establish a special Bureau of Forestry Research to be conducted along similar lines to the Forest Products Laboratory at Ottawa and the Federal Research Stations for the purpose of investigating the most pressing forestry problems now confronting the province of Quebec.

Municipalities and other public bodies are invited by the Department of Lands and Forests to acquire waste and proceed with replanting measures, and the Forest Service agrees to furnish without charge the necessary trees or seeds for the enterprise.

Provincial Forest Services has plans for still greater expansion and it is the determined policy of the Hon. Mr. Mercier to plant no less than fifty million seedlings of valuable species within the next five years.

### Fraser Realties, Ltd., Formed

A company just incorporated at Quebec is known as Fraser Realties, Ltd., with headquarters at Cabano, Que. The head of it is Archibald Fraser, president of Fraser Companies, Ltd., and the company capitalization is placed at $15,000,000, divided into shares of $100 par value each. It is understood that the organization is a personal one not connected with Fraser Companies, Ltd. The company is given authority to deal in properties, particularly timberlands and timber limits, also in water privileges and power, and the carrying on of the business of the lumber trade in all its branches, including pulp, paper and other by-products.

### St. Regis Paper Stock Split

The announcement of a 4 to 1 split in the stock of the St. Regis Paper Company is of interest here, because the company has extensive timber limits in Quebec province, which are at present being logged. When the news print market settles, it is said to be the intention of the company to establish a large pulp and paper mill a short distance from Quebec City.

### Dryden Paper Co's. Plans

The Dryden Paper Company is working on plans for increasing its capacity for the production of kraft paper by about 50 per cent. The production of kraft is now about 15,000 tons annually. The capacity of the present sulphate mill of the company is 25,000 tons annually.

### English Market for Canadian Pulp

Now that the principal pulp exports of Norway, Sweden, and Finland have arranged to pursue a common sales policy instead of a competitive one, it is the opinion of Harry A. Scott, Canadian Trade Commissioner in Liverpool that the United Kingdom pulp market may prove more attractive to Canadian producers of groundwood. As an indication of prices, he states that whereas quotations on Scandinavian groundwood have averaged around $15.20 per moist ton (2,240 pounds), c.i.f. United Kingdom port (inclusive of agents' commission), until recently, values have been moving gradually upwards and present quotations are at about $15.80.

The principal source of supply of groundwood pulp for English news print mills has always been Norway, from which an average of over 50 per cent of the imports are drawn. Sweden, Finland and Canada supply the balance. While Canadian shipments for a number of years past have fluctuated to quite an extent, more recently imports from Canada have definitely fallen off. In 1928 imports of mechanical wet pulp from the Dominion were only 70,000 tons, as compared with 129,000 in 1927 and 165,000 in 1926. The total imports to the United Kingdom during the past three years have averaged around 825,000 tons per annum, and the reduction in Canadian supplies has been taken care of largely by increased shipments from Finland and Sweden.

Another reason Mr. Scott gives for thinking that Canadian groundwood pulp manufacturers may find the United Kingdom market more interesting at present, is the increasing tendency of English newspapers to control their own supplies of news print, as shown by the erection of certain new mills in this country and the constant enlargement of several others, most of which belong to one or other of the large English newspaper groups. Canadian news print exports to the United Kingdom have shown a very heavy increase over the past three years. During the first six months of 1929, imports from the Dominion were higher than from any other source, and the further development of this trade is expected.

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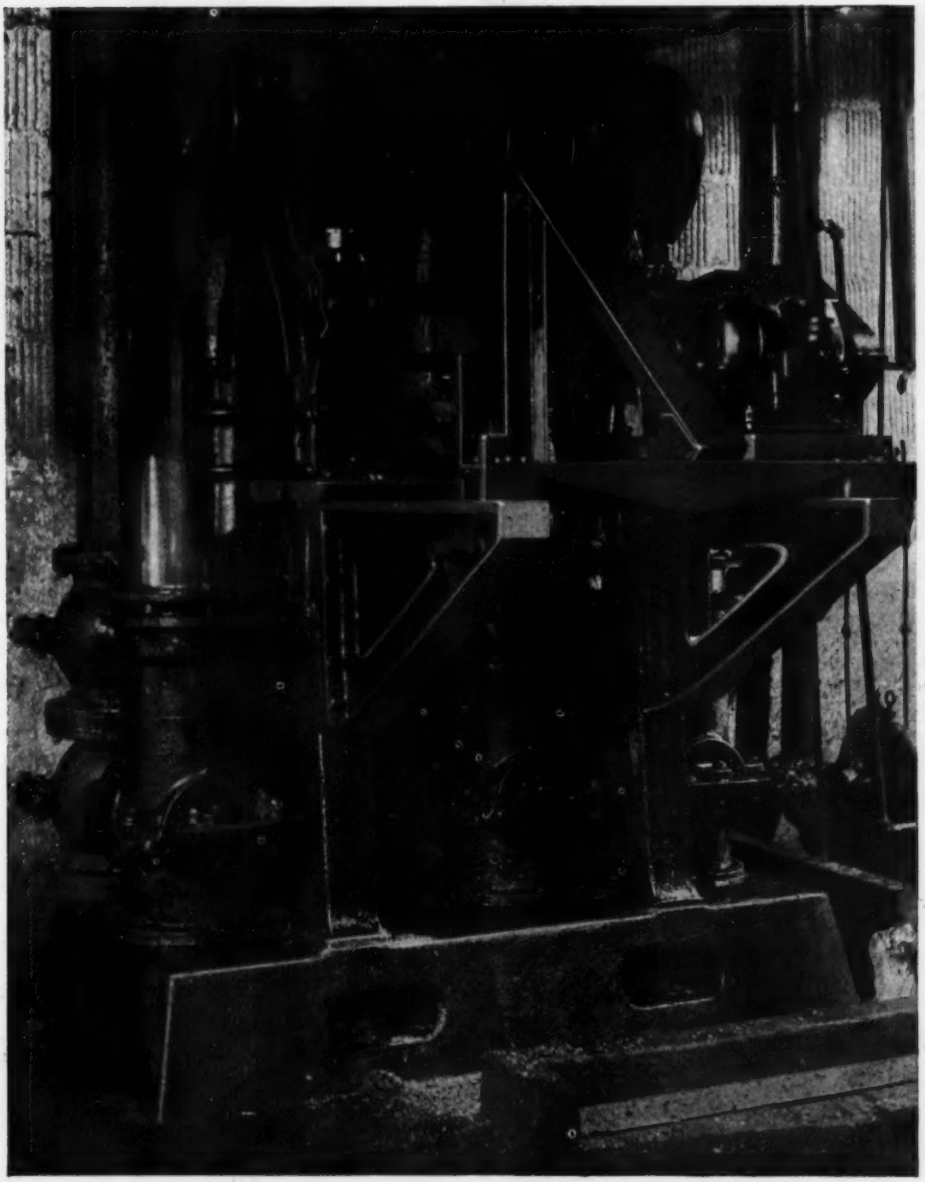
### To Make New Type of Fruit Boxes

PORTLAND, Ore., August 2, 1929.—The Fibre Box Company, of San Francisco, is co-operating with the Acme Orchard Company, of White Salmon, Wash., in perfecting a new type of apple box with handles for carrying two layers of fruit. A tentative trial of similar boxes by a number of northwest firms last year showed that the small container was popular with eastern city trade as well as with local consumers. The Fibre Box Company will start producing these containers for this year's crop.

**Triplex Stuff Pumps which daily handle up to 165 tons dry weight of stock at 5% consistency, Duplex Stuff Pumps and Centrifugal Pumps—all built especially for paper mill use. All sizes to meet your requirements, many of which are carried in stock for immediate shipment. Our Bulletin 114 completely describes our line of pumps and gives capacities, dimensions and other useful pumping data.**

**DOWNINGTOWN MFG. CO.**
**DOWNINGTOWN, PA., U. S. A.**



# Making Hand Sheets Of Uniform Thickness

By F. M. Williams[1]

Much research work has already been done upon the making of hand made test sheets, both for pulp evaluation and paper mill control.

In practically all of this work which has come to the writer's attention, much stress has been placed upon exact details of procedure in manipulation but nearly all investigators have emphasized very lightly if at all, the importance of the construction of the supporting plate underneath the Fourdrinier wire screen.

### Supporting Plate Should Be Dead Flat

Obviously, this supporting plate should be dead flat, even to surface grinding, and the wire screen should be stretched on tightly and evenly. Fastening the intermediate backing wire screen to the surface of the plate, will not correct a baggy or buckled fine screen resting upon it.

Further, in hand sheet moulds as hitherto described, the supporting plate has been made by drilling round hole perforations. In some cases, these holes are reamed, chamfered or countersunk, in an attempt to minimize the amount of dead metal surface which impedes the flow of water through the sheet at certain points.

Careful tests show that a supporting plate of this round hole construction has a tendency to give a spotted sheet, in fact on some kinds of stock, in making a thin sheet, careful examination will show the effect of the round holes and dead metal spaces in the perforated plate.

### A Better Form of Construction

A much better form of construction especially where a sheet of uniform thickness is required, as in pulp evaluation tests, consists in making the supporting plate with rectangular openings forming a series of cross ribs, the tops of which may be dressed to nearly a sharp edge, thereby presenting practically no flat metal surface to impede the flow of water through the screen at certain points.

This form of plate is easily surface ground dead flat on the top side and affords an even more rigid support than the perforated metal plate, as the ribs can be made of sufficient height to give any desired strength or stiffness.

With sheet moulds having this type of supporting plate with square openings, it is possible to make hand made sheets of as good formation as of uniform thickness over the entire surface, as paper made on a large paper machine.

[1] Consulting Chemist and Chemical Engineer, Watertown, N. Y.

## Group Insurance for Paper Mill Workers

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 16, 1929.—Group insurance for employees has been adopted by the Marinette and Menominee Paper Company, Marinette, Wis., according to W. W. Hinnenthal, manager. A contract has been signed with the Metropolitan Life Insurance Company by which employees will receive life insurance, disability benefits, sickness and accident benefits and non-occupational protection. Employees will be graded for premiums according to their wages and seniority, and insurance will be issued only to those who have been on the pay rolls for six months. The company is paying part of the premiums and the employees the remainder.

## New Moloch Foundry Opened

APPLETON, Wis., September 16, 1929.—Official opening of the new steel foundry of the Moloch Machine and Foundry Company, Kaukauna, Wis., took place last week. The building was constructed recently at a cost of $150,000 and greatly enlarges the company's business scope. A banquet was held for officials and employees of the company and customers as well. R. M. Kanik, president, reviewed the history and progress of the company and described its future possibilities.

## H. L. Zellerbach Heads Crown Zellerbach Corp.

Election of H. L. Zellerbach to the presidency of the Zellerbach Paper Company, subsidiary of the Crown Zellerbach Corporation, was announced by M. R. Higgins, Chairman of the latter corporation's executive committee. H. L. Zellerbach assumes the duties of Mr. Isadore Zellerbach who was elected chairman of the board at the same meeting.

Both officials retain their respective positions in the parent Crown Zellerbach Corporation. The new president of Zellerbach Paper Company is a vice president of Crown Zellerbach Corporation. Isadore Zellerbach is president of the same corporation in addition to the recently assumed office of chairman of the Zellerbach Paper Company's directorate.

Commenting upon the promotions, Mr. Higgins stated, "I desire

H. L. ZELLERBACH

to say as impressively as possible that the position of our company in the paper business never was so important as now, as it should be one of the strong factors for success of our great company, the Crown Zellerbach Corporation. This position in the industry is emphasized by the annual report and quarterly statement just published."

H. L. Zellerbach, the newly-elected president, has been connected with the company for the past twelve years, following his graduation from the University of Pennsylvania where he was enrolled in the Wharton School of Business and Finance. Among the executive positions in the organization that he held previously to his present office are: manager, Export Department, manager San Francisco Division of Zellerbach Paper Company, and assistant to the president.

## Moyer & Pratt Mill Addition

[FROM OUR REGULAR CORRESPONDENT]

LYONS FALLS, N. Y., September 14, 1929.—Construction work on the new addition to the Moyer & Pratt Paper Mill is progressing rapidly and will be fully completed within the next few weeks. The newly built structure will replace the section of the plant destroyed in the recent fire. Silas Mitchell, a foreman of the construction project, suffered a fall during the past week while at work and it is feared that his hip is broken. He was taken to Faxton Hospital where he is under observation to determine the extent of his injuries.

# ANNOUNCING

## the CENTRIFUGAL ENGINEERING AND PATENTS CORPORATION

**The purifying and preparation of paper making fibres by centrifugal force, the biggest new development in paper making, is creating new standards of paper quality. Paper machine stuff so treated makes the cleanest and strongest paper ever known. In order to make this new process more widely available to the industry, the recently organized Centrifugal Engineering and Patents Corporation has purchased the patents under which the Erkensator formerly was manufactured and will devote itself exclusively to the further development of the principles of centrifugal stuff purification.**

***Licenses for the use of its patents have been granted to the Bird Machine Company, South Walpole, Mass., and to the Tolhurst Machine Works, Troy N. Y.***

**The day of almost-clean paper is over —learn the advantages of centrifugal separation before your competitors' success calls it more forcibly to your attention. Centrifugal Engineering and Patents Corporation, 15 Exchange Place, Jersey City, N. J.**

**FOR THE CLEANEST PAPER THAT CAN BE MADE**

## USE CENTRIFUGAL SEPARATORS

3247

# Standardization

By George Momberg*

*The words standardization and co-operation* have been and are today the two most used and abused words in the dictionary. The meaning of either or both is so clearly defined yet far reaching, that in the end they become almost synonymous.

### Standardization Requires Co-operation

Standardization of paper for *printed forms* and *letterheads* requires the co-operation of every one using such papers, with the purchasing agent; advising him of the purpose for which each form is intended, its usage, length of time it is in service, the number of times used and the hands it passes through, the impression the paper is to make, etc. Only with this knowledge can a purchaser of printing buy intelligently.

A few years ago the mills making paper for the aforementioned purposes realized the futility of making bond, ledger and writing papers to suit the imagined demand for papers varying in cost of ¼ cent to 1 cent per pound and learned that stocks could be better produced on a production basis of long runs on fewer grades, cutting their own number of watermarks to 25 per cent of their former number and concentrating on fewer grades causing the jobber to eliminate a lot of cats and dogs varying in price only slightly, and adding nothing to the actual economic value of papers with just a minimum difference in price. Here again we have standardization spelled c-o-o-p-e-r-a-t-i-o-n.

### Score One for Standardization

The paper merchants were forced or enabled whichever the case may have been to carry fewer watermarks but more of each grade at no larger investment than before and with better service to the printer and ultimate consumer. Score one for standardization.

That this policy or recommendation should have stopped with the paper merchant would have been improbable. The printing industry and paper industry are too closely allied for cognizance not to have been taken by the printer. He too saw the desirability of concentration and printing on a production basis.

While the manufacturers of paper concentrated on fewer grades and perhaps approximately the same prices grade for grade, competition has not been eliminated. The human and mechanical element still exists. Therefore the paper merchant is still a necessity to the printer and through the printer to *his* customer.

Due to the above mentioned curtailment of expense in operation, the mills have not only given better value but have been enabled to exploit and advertise their papers to the actual benefit of every user of the finished product. Research departments have actually come into their own and chemistry is not only used to analyze but to create values.

### A Comparative Analysis

One manufacturer has given to the consumer of papers a yard stick for the purpose of comparison of grades and give to any one desiring them an outline of proven standards of quality. This outline does not mention their own brands but represents practically the standards aimed at by all manufacturers of such papers. As an example for the three highest grades of letter heads the following comparative analysis understandable to the layman is made:

| First Quality | | | Double Folds Average |
|---|---|---|---|
| Rag 100% | Sulphite 00% | Mullen Test 55 | 1654 with the grain 1030 against grain |
| Second Quality | | | |
| 80% | 20% | 50 | 1000 with the grain 800 against grain |
| Third Quality | | | |
| 70% | 30% | 45 | 794 with the grain 450 against grain |

### For Correspondence

For correspondence other than the above (which are usually used by executives) the following are suggested (for sales letterheads, Advertising and Sales Promotion):

| Class "A" | | | |
|---|---|---|---|
| | | | Average Double Folds |
| 60% | 40% | 40 | 500 with the grain 300 against grain |
| Class "B" | | | |
| 45% | 55% | 38 | 400 with the grain 200 against grain |

### For General Letter Heads

For general letterheads used by various departments for the day to day routine correspondence, the following is recommended:

| Rag | Sulphite | Mullen Test | Average Double Folds |
|---|---|---|---|
| 30% | 70% | 34 | 198 with the grain 70 against grain |

The above are just a part of the outline which extends to index bristols and ledger papers.

Individuality in correspondence papers even when made in these standards is not lacking, due to varying finishes and colors.

Standardization in papers used for illustrative advertising purposes is not practicable due to the varying demands of taste, typography, cuts, ink, etc., but surely a step has been taken in the right direction.

* Detroit Manager Whitaker Paper Co.

## Boston Paper Market Firm

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 16, 1929.—General optimism continues to rule the Boston paper trade in the Hub. The market is apparently on a firm foundation, with substantial orders coming in and the promise of an active fall and winter. This condition applies to both fine and coarse papers. A number of mills have recently opened local offices and another is to do so shortly. Mill representatives in the city last week report a good summer business and are optimistic in their views for the fall and winter.

The box board situation remains unchanged as far as prices are concerned, but business is going on as usual, carton manufacturers continuing to place fairly sizable orders for material. The prospect for an active season seems favorable.

While the paper stock market has been comparatively inactive, it is expected that improvement will develop in October. Water supply conditions among the paper manufacturers are not of the best at present, but with the advent of fall this difficulty will undoubtedly be remedied. Values as a whole are unaltered, although there have been a few minor changes. The quotation for No. 1 mixed paper has been marked up from .40 at .45 to .45 at .50. In foreign rags, dark cottons are now quotable at 1.55 at 1.57½ compared with a previous price of 1.55.

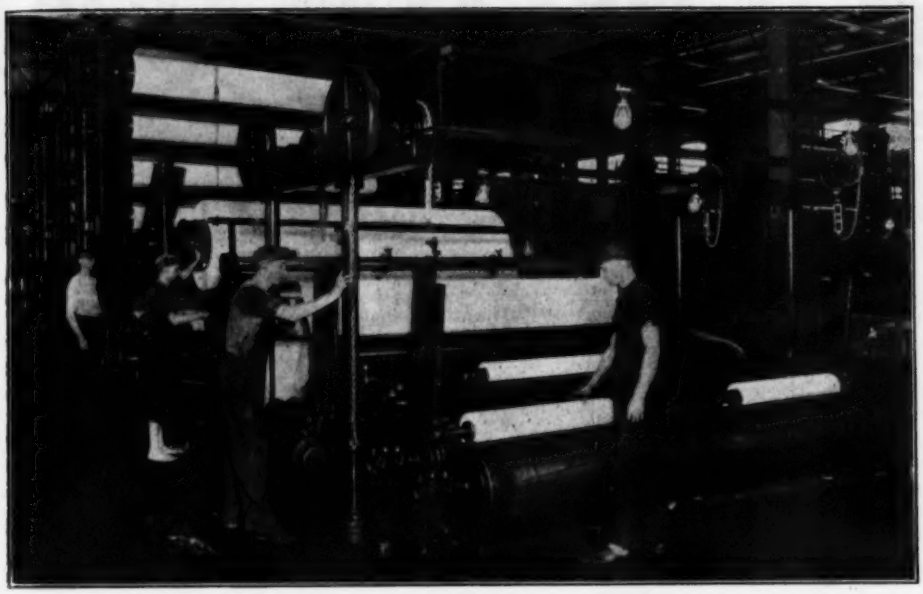
## Schlafer's Paper Mill Supply Catalog

Schlafer's Paper Mill Supply Catalog is now ready for distribution. It is a loose leaf booklet of 112 pages bound in Vellumoid and printed in four colors on 100 pound coated paper. It deals exclusively with hardware items of interest to the paper maker and shows many important paper making supplies usually hard to obtain. It is said to be the only catalog of its kind printed in America. It is issued by the Schlafer Hardware Company, 115-19 West College avenue, St. Louis, Mo.

## Awards for Government Paper

WASHINGTON, D. C., September 18, 1929.—Reese & Reese have been awarded the contract for furnishing the Government Printing Office with 3,200 pounds (10,000 sheets) of 24x36—320, high finish red sulphite paper at 10.395 cents per pound, bids for which were received on August 30.

The Cauthorne Paper Company will furnish 3,200 pounds of 24x38—No. 32 white paraffin paper at 12.3 cents per pound, bids for which were received on August 28.



"M & W" Four Drum Winder for Book Paper 18" dia. drums 150" face. Photograph taken in mill of Champion Coated Paper Co., Hamilton, O. (This is one of their 14 "M & W" Winders.

# 25th Anniversary of the "M & W" Four Drum Winder and Slitter

**Today it is still the most practical and economical Winder, and is universally used by leading paper makers.**

**During the past few years improvements, which are fully covered by Patents, have been made to meet conditions of the modern high speed and up-to-date mills.**

## OVER 1000 IN OPERATION ON ALL GRADES OF PAPER AND BOARD.

**Each roll is wound on an independent shaft. If a break occurs, paper on other rolls is not affected; this means less number of rolls to be pieced.**

**Plugged rolls are wound on Collapsible Shafts.**

**Paper is wound on shells or cores of any description. This is a great advantage over the Two Drum Winder Type, as the shells or cores do not have to be the same length as rolls of paper.**

## NO INTERWEAVING OF ROLLS.

**Rolls wound any width and of variable diameters.**

**Shipping rolls made on paper machines with this winder from an uneven sheet of paper, made hard and without wrinkles.**

THE MOORE & WHITE CO., NORTH PHILA. STATION PHILADELPHIA, PA.

PAPER · MACHINE · BUILDERS

# CONSTRUCTION NEWS

*A Summary of Vital Facts Regarding Construction, Finances and Operation of Paper Mills*

### Construction News

**Elkhart, Ind.**—The American Coating Mills, Inc., has approved plans for the construction of a new addition to plant on Division street, one story, reported to cost about $30,000, with equipment. Contract for superstructure has been let to George C. Kistner, 514 South Main street, Elkhart.

**Menasha, Wis.**—The Marathon Paper Mills, Inc., will proceed with the construction of a new mill addition on River street, two story, brick, for which contract for steel superstructure was recently let to the Worden-Allen Company, Point Washington road, Milwaukee. It is proposed to have the unit ready for occupancy at an early date. It will represent an investment of about $140,000, including equipment.

**Columbus, Ohio**—The Central Ohio Paper Company, 226 North Fifth street, has awarded a general building contract to E. Elford & Son, 555 Park street, South, Columbus, for proposed new plant for storage and distributing service at location noted, recently referred to in these columns. It will be two and three story, 100x120 feet, estimated to cost about $120,000, with equipment. Work will begin at once; sub-contracts will soon be let for elevators, heating, plumbing and miscellaneous finishing work. H. T. Collingwood, 1520 Bryden street, is architect. Roy Miller is chairman of the board of directors.

**Fort Madison, Iowa**—Fire, September 6, damaged portion of works of the Hinde & Dauch Paper Company with loss reported at $13,000, a part representing raw material. The damage will be replaced. Headquarters of the company are at Sandusky, Ohio.

**Richmond, Va.**—I. J. Marcuse, 2213 Monument Avenue, Richmond, vice-president of the Bedford Pulp and Paper Company, with local offices in the Mutual Building, and mill at Big Island, Va., has organized with a number of associates a new company to be known as the Craig Hydro-Electric Corporation, with nominal capital $50,000, to construct and operate a power plant. It is understood that the proposed unit will be located near the paper mill property; size and details are still to be determined. The project will likely mature at an early date.

**Philadelphia, Pa.**—Fire, September 9, damaged a portion of the storage and distributing plant of the Fibre Container Company, Nixon street, Manayunk section. An official estimate of loss has not been announced. It is understood that the damage will be replaced at an early date.

**Monroe, La.—The Brown Paper Mill Company, Monroe, has** contracted with the Virginia Bridge and Iron Company, Roanoke, Va., for structural steel framing for initial units of new plant addition, for which general contract recently was let to the Morton C. Tuttle Company, Boston, Mass. A total of about 2,000 tons of structural steel shapes is included in the order. Work on this project is being placed in progress, and will be pushed to completion at earliest date. The entire expansion program will represent an investment of close to $5,000,000. George F. Hardy, 309 Broadway, New York, is consulting engineer.

**Chicago, Ill.—The Phoenix Paper Products Company has** leased space in the Huron & Townsend Building, aggregating about 3,500 square feet of floor space, and will occupy for local operations and headquarters. H. C. Leonard is president.

**Pensacola, Fla.**—The Newport Company, South Milwaukee, Wis., manufacturer of industrial chemicals and naval stores, with main plant at Carrollville, Wis., has formed an affiliation with the Armstrong Cork Company, 24th street, Pittsburgh, Pa., under the name of the Armstrong-Newport Company, owned and controlled jointly by the two parent organizations. During recent months, extensive research has been under way by the two companies for the manufacture of insulating board under a special process, using shredded wood in pulp-like form as raw material, the substance to be pulverized and rolled into the finished insulating board product. A tract of land has been acquired in the vicinity of Pensacola, including timber lands in the immediate vicinity, and the new organization is reported planning the early construction of a new mill for this production, with equipment to provide for the complete utilization of the spent wood fiber. As now projected, the plant will consist of several units, with boiler house, machine shop and auxiliary structures, and is reported to cost more than $750,000. An affiliated works will be operated for the production of rosin, turpentine and other naval stores. It is understood that the plant for wallboard production will be operated by the Newport company, while the Armstrong organization will conduct sales. A. A. Schlesinger is president of the consolidated organization.

**Wisconsin Rapids, Wis.**—The Consolidated Water Power and Paper Company, Wisconsin Rapids, has approved plans for two additions to local mill, consisting of a two-story unit, 68x115 feet, to be equipped as a finishing department, and a one-story structure, 53x110 feet, to be used primarily for filter plant service. The expansion program is reported to cost in excess of $80,000.

**Chicago, Ill.**—The Ability Corrugated Box Company, 420 North Winchester avenue, recently organized to manufacture and deal in corrugated boxes and containers, is said to be planning early operation of a local plant. Samuel A. Litman and George Von Kaenel head the organization.

**Rock City Falls, N. Y.**—The United States Rubber Company, Broadway and 58th street, New York, has organized a subsidiary under the title of the Fiber Products Department, and proposed to operate plants for the production of unwoven fiber specialties at Rock City Falls, and Cleveland, Ohio, where considerable experimental work has been under way for some time past. R. P. Rose is general manager of the new division.

**Easton, Pa.**—The Transogram Company, Inc., has been organized under Pennsylvania laws, with capital of $10,000, to manufacture paper products, including games, toys, etc., formed of cardboard stocks. The company will take over the going organization of same name, with plant at Easton and headquarters at 215 Fourth avenue, New York, and it is understood that an expansion program will be carried out. Incorporators of the new organization are Charles S. Raizen, who will be treasurer; D. D. Workman and Wayne E. Barber, the two last noted of Easton.

**Green Bay, Wis.**—The acid house of the Nathan Paper Mills,

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NEW YORK, N.Y., U.S.A.

Inc., was damaged by fire September 4; an official estimate of loss has not been announced. The damage will be replaced.

**Attleboro, Mass.**—The American Reinforced Paper Company, Starkey avenue, is taking bids on general contract for the construction of a new addition to its mill, to be one story, brick and steel, 46x175 feet, reported to cost close to $45,000, with equipment. Charles T. Main, 201 Devonshire street, Boston, Mass., architect and engineer.

**Toronto, Ont.**—The Canadian Paperboard Company, foot of Carlow avenue, has plans maturing for a new addition to its mill, to be one story and basement, 110x125 feet, reinforced-concrete, reported to cost close to $85,000, with equipment. It is said that bids will be asked on general contract at an early date. Kerry & Chase, Confederation Life Building, Toronto, are engineers.

**Chicago, Ill.—The Vortex Manufacturing Company, Western and Austin avenues, manufacturers of paper drinking cups and kindred specialties, has disposed for a stock issue to total $4,579,000, a portion of proceeds to be used for general expansion. The present plant has a floor space of about 120,000 square feet, with a capacity of more than one billion cups, etc., per annum. P. T. Potts is president.**

### New Companies, Etc.

**Brooklyn, N. Y.**—The Webster Paper Box Corporation, has been organized with a capital of $5,000, to manufacture and deal in paper boxes and containers. The incorporators are Julius L. Baller and Pierson E. Clair, Brooklyn. The company will be represented by Alexander Mutterperl, 26 Court street, Brooklyn, attorney.

**San Francisco, Calif.**—The Grays Harbor Pulp and Paper Company, care of The Corporation Trust Company of America, duPont Building, Wilmington, Del., has filed notice of increase in capitalization from 80,000 to 106,307 shares of stock, no par value, a portion of proceeds to be used for expansion.

**Dover, Del.**—The Hytest Board Company, care of the United States Corporation Company, Dover, (incorporating agent,) has been chartered with a capital of $7,500,000, and 600,000 shares of common stock, no par value, to manufacture paper products, pulp products and paperboard.

**New York, N. Y.**—The Edgar B. Flack Company, Inc., has been incorporated with a capital of $50,000, to manufacture and deal in paper goods of various kinds. The incorporators are William F. Delaney, Ernest A. Zema and Edgar B. Flack, 11 West 42nd street, New York. The last noted heads the company.

**Queens, L. I.**—The Muller Paper Goods Company, 2350 Linden street, has filed notice of increase in capital from $10,000 to $200,000, a portion of the proceeds to be used for general expansion. The Oldmill Paper Products Corporation, same address, an affiliated organization, has also arranged for an increase in capital from $1,000 to $50,000, likewise for expansion.

## Albany Container Plant to Triple Output

[FROM OUR REGULAR CORRESPONDENT]

ALBANY, N. Y., September 14, 1929.—The Albany Corrugated Container Corporation will triple its plant production with removal of machinery and offices on October 1 from the plant in this city to the newly leased Simmons Building in Menands, according to C. C. Nuckols, president of the firm, who heads a group of business men financing its affairs. The firm has forged rapidly ahead during the past year and is now regarded as one of the foremost producers of paper boxes in the district, catering to a nation-wide demand for its products. The company will occupy approximately 40,000 square feet of space in the building, which is one of the units in the extensive industrial development planned by the Simmons firm.

Officials of the company claim that they were compelled to find a larger plant on the basis of potential business while the new location will also provide ample railroad facilities for shipping purposes. The company was formerly known as the Yorkshire Box Company until it was taken over several months ago by a group including Mr. Nuckols, Joseph Seery, Cornell S. Hawley, T. I. Van Antwerp and Daniel J. Dugan, all of this city. The firm was then reorganized and the name changed. Removal of machinery and installation of new equipment will be made gradually this month in order that production will not be hampered.

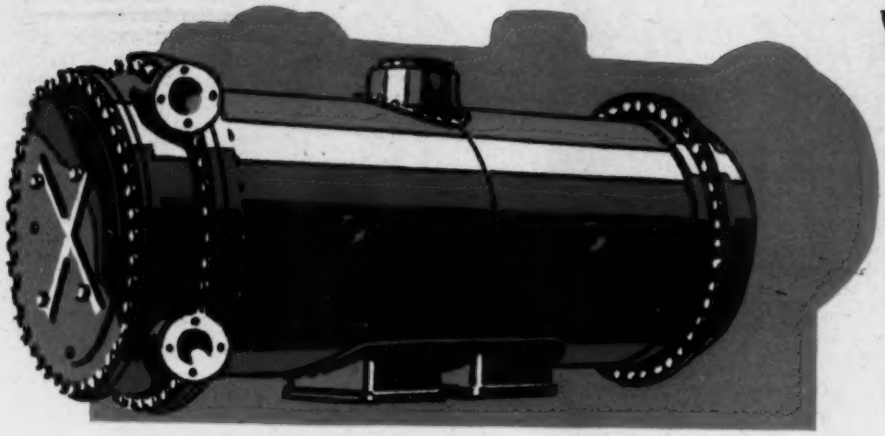
Besides a host of ordinary uses for corrugated containers engineers for the company have devised other new shipping uses which include carrying bread and cake in wholesale deliveries, for shipping bananas, for sending eggs direct from farm to consumer, for shipping ice cream packed in dry ice; also casket and steel burial vaults, mattresses and bedding, radio, for cushioning and protecting iceless refrigerators, and other uses. In addition the company makes a special container for the state library in the circulation of books by mail and truck.

## Green Bay's Ambitious Safety Program

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 16, 1929.—Green Bay, Wis., wants to be a worthy host to the 1930 annual Fox River Valley Safety Conference and therefore is inaugurating a safety program this fall that will give the city a record to boast about when 1,500 representatives of various industries invade the city next spring. A meeting of safety officials of paper mills and other plants, and of various civic interests was held last week at which Ernest W. Corn, of Chicago, field representative of the National Safety Council, was the speaker. It was found that the industries were quite well organized along safety lines but there was need of extending the idea to traffic and the home. A program will be mapped out for the city. W. J. Peacock, of the Northern Paper Mills, is chairman of the Green Bay Safety Council, and will direct this activity.

PICTURE TAKEN AT THE SALES CONFERENCE OF THE AMERICAN WRITING PAPER CO., HOLYOKE, SEPT. 6-7, 1929



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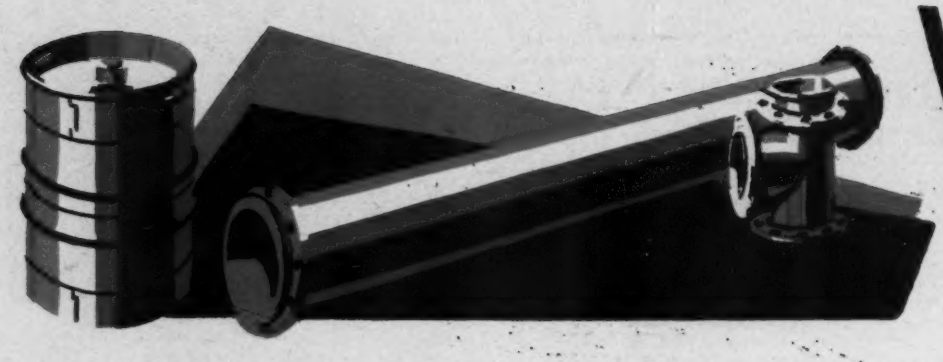

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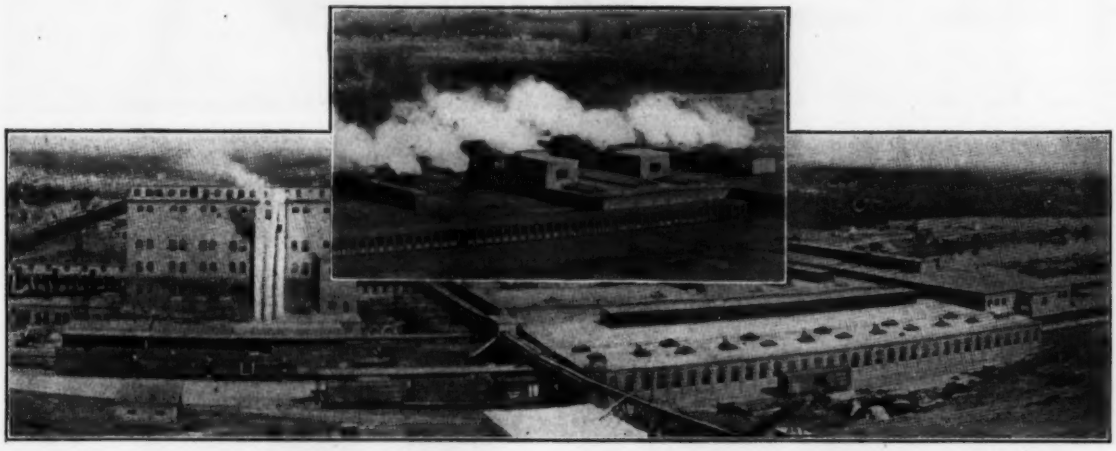

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## ROSS ENGINEERING OF CANADA, LIMITED

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# Obituary

### Fred H. Baker

SARATOGA SPRINGS, N. Y., September 15, 1929.—Fred H. Baker, president and general manager of the Baker Manufacturing Corporation, died yesterday at his home here after a long illness. His age was sixty-five. Mr. Baker was also president of the Schenectady Holding Company which owns and operates the Mohawk Hotel, Schenectady, and was a director of the Adirondack Trust Company, of Saratoga Springs. He was a thirty-second degree Mason and a charter member of the Saratoga Lodge of Elks. He is survived by a widow and two daughters and by his father, James H. Baker, of Daytona, Fla.

Mr. Baker started work at the age of thirteen as blacksmith's helper, at three dollars per week, and the following year went to work as a helper in the steam fitting and plumbing business to learn the trade, which he did. In 1881 he went with Baker & Shevlin, of which firm his father was senior member. He had charge of the office work, attending to customers, ordering ma-

FRED H. BAKER

terials, etc. Later, as they branched out in the manufacture of pulp and paper making machinery, he went on the road following up inquiries received. Naturally the work he did in connection with the company grew in importance as his age and experience increased.

The Baker & Shevlin business was started with a paid in capital of $2,000. In 1901 the company was incorporated for $500,000, with Mr. Baker as treasurer. There was $100,000 bonds issued. He continued with the company until March, 1912. In the meantime the earnings were put back into the company to a large extent, bonds were paid off, and they had actual assets of more than $500,000, some $60,000 of which was in cash. Besides paying off all the debt and accumulating these assets, the stock holders had drawn out, between 1902 and 1912, something over $500,000. In the meantime, it was generally acknowledged that Mr. Baker was quite an important part of the personnel in the way of management of the business and plant.

Dissatisfaction arose amongst the owners, which resulted in the Shevlin interests buying out the Baker interests. Then the Shevlin interests organized a company known as the George F. Shevlin Manufacturing Company, which conducted the business for a few months and then went into bankruptcy. In the Fall of 1916, the Receiver who had been appointed, not being satisfactory to the creditors, was removed, and Mr. Baker was appointed in his stead. In November, 1916, the plant was sold by the Receiver or Trustee in Bankruptcy and bought by parties who organized the present company, the Baker Manufacturing Corporation, of which Mr Baker has been manager and treasurer since its inauguration.

During the years from March, 1912, to the summer of 1916, inclusive, Mr. Baker conducted a small hotel at Daytona, Florida, which was owned by his father, and which had been under lease to a party who had not conducted it in a satisfactory manner. Mr. Baker conducted this hotel in such a way that a good permanent business was established, so that when he entered the Baker Manufacturing Corporation and could no longer go to Florida to attend to this hotel, it was rented to good advantage and the tenant found the business sufficiently attractive after one season, to purchase the hotel at a satisfactory price.

## Power Mill Employment

There was a decrease in both payrolls and employment in the paper and pulp mills during July compared with June while there was a corresponding increase in both employment and payrolls in the paper box industry according to the Bureau of Labor Statistics, Department of Labor.

Reports received by the Bureau from 214 paper and pulp mills gave their June employment at 59,847 decreasing in July to 59,678 a decrease of 0.3 per cent. The payrolls in these mills also decreased from $1,632,059 in June to $1,597,990 in July a decrease of 2.1 per cent.

The Bureau also received reports from 179 paper box plants which gave their June employment at 18,633 increasing in July to 18,828 an increase of 1 per cent. The payrolls in these plants also increased from $421,516 in June to $422,807 in July an increase of 0.3 per cent.

## Bayfield Forest Development Plans

[FROM OUR REGULAR CORRESPONDENT]

APPLETON, Wis., September 16, 1929.—Norway and white pine will be planted immediately in the Bayfield Federal Forest of 112,000 acres, according to reforestation plans outlined by L. F. Kneipp, of the United States forest department, Washington, D. C., following a personal survey. Accompanied by E. W. Tinker, forester of the Lake States Forest district, he went over the regions now owned by the Government and also inspected additional lands which will be bought over a period of years. The Wisconsin legislature has given permission to purchase one million acres of forest preserves in the state as a means of saving timber and pulp wood for the future. The Government already has selected half a million acres.

## Precision Instruments for Paper

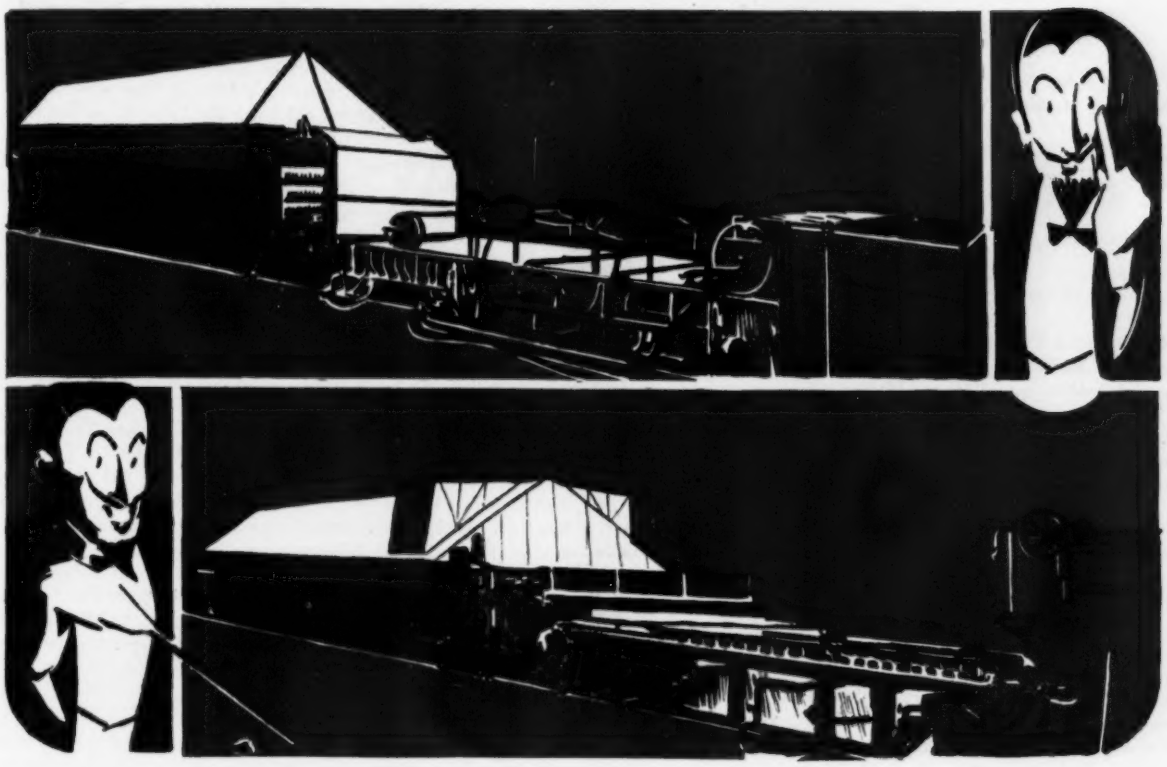
Toledo Precision Devices, Inc., which was recently formed as a subsidiary of the Toledo Scale Company, makes more than fifty precision instruments and devices, a number of which apply directly to the manufacture of paper. Their use varies from an actual gauging of paper thickness in the process of manufacture to the determination of surface area from weight.

Besides the distribution of these products, an investigation department is maintained where specific problems of paper manufacturers are worked out upon submission. The factory and headquarters of the Toledo Precision Devices Inc., the new company, are located in Toledo, Ohio.

## Japanese Paper Production

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 18, 1929.—Production by the mills of the Japanese Paper Manufacturers Association during the month of June is reported to have reached 5,068 short tons and sales 54,502 short tons, bringing the total for the first six months of this year up to 353,436 tons and 345,885 tons respectively.



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# New York Trade Jottings

C. P. Winslow, director of the United States Forest Products Laboratory, Madison, Wis., was a New York visitor last week.

* * *

G. A. Ware and M. L. Smith, of the News Print Service Bureau, 342 Madison Avenue, New York, are visiting the Lake States news print mills this week.

* * *

The Ideal Card and Paper Company announce their removal to larger quarters at 151 West 25th street, New York, where a complete stock of printing papers will be carried.

* * *

R. Palmieri & Co., paper stock dealers and packers, of 308 West Broadway, New York, have been elected to membership of the National Association of Waste Material Dealers, Inc.

* * *

J. A. C. Kavanagh, statistician of the American Paper and Pulp Association, 18 East 41st street, New York, has returned to headquarters after spending an enjoyable vacation in Vermont.

* * *

Joseph A. Benedetto, of D. Benedetto, Inc., 383 Water street, New York, has returned from a three months' honeymoon trip to Europe, during which he and his bride toured practically all the important countries on the Continent and also visited England.

* * *

L. E. Longstreth, of the Container Corporation of America, has been accepted by the Joint Committee on Approved Pulp Testing Chemists for the Paper Industry of the United States, 18 East 41st street, New York, as an approved mill pulp testing chemist, and is listed as such, effective September 11, 1929.

* * *

The Howland Bag and Paper Company, manufacturers of paper bags, of Dexter, N. Y., announce the appointment of Julius Gold as their exclusive selling agent for the Metropolitan district. The New York office of the company is located at 55 West 42nd street. This company manufactures square, flat and automatic bags.

* * *

Joseph Mayper, of the legal department of the American Arbitration Association, gave an interesting address at the regular weekly meeting of the New York Division of the Salesmen's Association of the Paper Industry, held at the Canadian Club, last Monday. Mr. Mayper described the methods used when cases are arbitrated, in a comprehensive manner. There was an excellent attendance of members and guests, including S. L. Willson, president of the American Paper and Pulp Association, and Gustav Asplund, of the Swedish Consulate.

## August Power Output Shows Increase

The New England Power Association, controlled by International Hydro-Electric System, a division of the International Paper and Power Company, produced 147,859,000 kilowatt hours of electric energy in August, an increase of 39 per cent over the output of the Association in August 1928, and 68 per cent over that of August, 1927. In the first eight months of this year, the output of the New England Power Association was 1,148,474,000 kilowatt hours, 32 per cent greater than in the corresponding period of 1928 and 65 per cent greater than in the first eight months of 1927. The output of the Association in the twelve months ended August 31, 1929, was 1,656,581,000 kilowatt hours, an increase of 30 per cent over the output of the Association in the twelve months ended August 31, 1928.

Supplying this energy, New England Power Association has 229,500 horsepower in its hydro-electric plants and 477,500 horsepower in its steam-electric plants. The 185,000 horsepower hydro-electric plant of the Association now under construction at the lower Fifteen Mile Falls site on the upper Connecticut River will raise the capacity of the hydro-electric plants of the Association to 414,500 horsepower.

## American Mills Now Using Russian Pulpwood

An interesting development in the pulpwood field of late, has been the importation of Russian pulpwood into the American market. The quality of Russian pulpwood was well known in Europe, where it has been used for years by some of the leading pulp manufacturers, and where it was considered by many authorities as better than any other wood. On the other hand, the American mills had no experience with Russian wood, and at the outset were hesitant about considering its use.

Due to the vast extent of the woodlands of Russia the country had both quantity and quality to offer since the industry was taken over by the Soviet Government. On account of the short season in Russia the wood is slow grown, and is consequently of great density. The pulpwood is guaranteed 100 per cent all white spruce, the outer and inner bark entirely removed, in four foot lengths, ends sawed straight, containing very few small knots that are shaved evenly with the surface.

To market this wood in this country, the Amtorg Trading Corporation, who are the representatives of the Soviet Government in America, appointed Daniel M. Hicks, Inc., of 200 Fifth avenue, New York, as agents and all the Russian wood sold in this market has been sold by them. In order to introduce the wood, Daniel M. Hicks, Inc., succeeded in interesting a number of the leading pulp mills in sample shipments. The wood turned out to be entirely satisfactory in every respect, and resulted in contracts for cargo shipments. The first cargo arrived on August 6, 1929, at Three Rivers, Quebec, Canada, for the Hammermill Paper Company, who took overside delivery in lake boats for shipment through the St. Lawrence River and the Lakes to their mill at Erie, Pa. The second cargo arrived on September 2, 1929, at Baltimore, Md., and other cargoes will be arriving at other ports which will take care of practically all the wood that Russia is able to ship this year before the close of navigation.

On the cargoes delivered the mills report the wood to be of excellent quality, 100 per cent spruce, one mill stating: "The wood was hand peeled, evidently with draw knives, and was absolutely free from bark. There were a few pin knots but these were smooth and cut even with the surface. The wood was of a light color, entirely sound and had evidently been seasoned for a considerable period. . . . Another item of note is the very close grain of the wood, one stick about 7 inches in diameter showing over 100 annual rings."

The New York State College of Forestry at Syracuse made a pulping test in which they report in part under the heading of "Pulping of Russian Spruce by the Sulphite Process": "The bleach requirement of Russian spruce is decidedly lower than native spruce. The latter under similar conditions requires approximately 12 to 13 per cent of bleach whereas the former requires only 9.3 per cent. This point is outstanding, inasmuch as a good yield and good strength are likewise obtained."

The wood is particularly adaptable for high grade pulps, and now that it has proven of such exceptional quality, Daniel M. Hicks, Inc., expect to book business for a considerable cordage over next year, and are convinced that Russian pulpwood has found a permanent market in this country.

## Pulp and Paper Making Classes

APPLETON, Wis., September 16, 1929.—Classes in pulp and paper making will be resumed within a week or two in various cities where paper mills are located, according to Arthur Bouffard, itinerant co-ordinator, who serves under the state vocational board of Wisconsin. The first one for the season has been organized at the Riverside Paper Corporation, Appleton, Wis., and others will be established as fast as time will permit. Classes in lubrication are to be given employees of mills at Neenah and Menasha, Wis. This will be a new instruction feature of the state's educational program so mills may better their efficiency and employees may improve their status.

# The Symbol of Inlet Satisfaction in 120 Mills!

IN any of the 120 mills where Voith Inlets are in use—this "VALLEY IRON" name plate represents a degree of Inlet satisfaction which is unattainable through any other type of installation.

Because—the Voith Inlet has distinct advantages which are reflected in greater productive capacity—more uniform caliper—lower operating cost—and better paper quality.

Which—simmered down—mean bigger profits for their users at the end of each year!

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We have the facts ready to mail to you in an interesting booklet. May we send it? Address the Valley Iron Works Company, Appleton, Wisconsin.

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Member A. B. C. Audit Bureau of Circulations

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## COMING EVENTS

Technical Association of the Pulp and Paper Industry, annual fall meeting, Richmond, Va., September 24 to 26, and Washington, D. C., September 27.

National Paper Trade Association of the United States, annual fall convention, Congress Hotel, Chicago, October 7 to 9.

Paper and Pulp Section of the National Safety Council, Eighteenth Annual Safety Congress, Stevens Hotel, Chicago, September 30 to October 4.

Convention of the Cost Association of the Paper Industry, Hotel Wausau, Wausau, Wis., September 19 to 21.

## THE PULP AND PAPER FELLOWSHIP

The award to Mr. R. H. Doughty of the Fellowship for the Current year at the Forest Products Laboratory, Madison, Wis., which was recently established by the American Paper and Pulp Association and the Technical Association of the Pulp and Paper Industry reflects in a tangible manner the rapidly growing interest of the pulp and paper industry in increasing its fundamental technical knowledge of the very complex materials and processes upon which its business is built. Chief among these obviously is precise knowledge of the basic properties of pulps in their relation to the properties of paper as required by the use to which the ultimate consumer puts the product.

It is in this field, one of common interest to the whole Association, that the fellowship work has been carefully planned and started under the direction of Mr. Clark C. Heritage, who until very recently was in charge of the pulp and paper work at Madison. The preliminary studies on the relation of pulp properties to paper properties has already pointed the way to new and valuable relationships. The Advisory Committee is constantly in touch with the work and will receive progress reports for both associations at regular intervals.

Mr. Doughty has been a member of the Forest Products Laboratory staff since January, 1926. His work has been concerned with studies of pulp bleaching and of the physical properties of pulp. He is a graduate chemical engineer from the University of Maine in the class of 1925. In June, 1928, he obtained a Master's Degree in Science from the University of Wisconsin.

Through Mr. Doughty's former association with the Laboratory staff and his acquaintance with the research technique of the laboratory, his availability for this fellowship is indeed fortunate.

The industry is fortunate in having a vigorous committee of high technical standing acting in liason with the Forest Products Laboratory, consisting of Messrs. R. H. Stevens, Bjarne Johnsen, W. G. MacNaughton, R. G. Macdonald and J. E. Alexander. Through the close cooperation of this committee with the Pulp and Paper Section at Madison, the opportunity was presented and accepted to establish this new association activity.

## POWER PLANT EFFICIENCY

Every manufacturer and producer has in mind keeping his production costs at a minimum. This power plant efficiency is possible through the use of various types of equipment designed for that purpose, most important of which are instruments. Instruments have achieved a place of importance in the operation of power plants which apparently is not fully appreciated.

At the eighth National Exposition of Power and Mechanical Engineering, known as the National Power Show, to be held in Grand Central Palace, New York City, during the week of December 2, the manufacturer and operating engineer will find instruments in greater variety and importance than could be viewed in an extensive tour through scores of the most interesting industrial plants in the country.

It is a well known fact that many power plants, boiler rooms and mechanical departments are almost hopelessly out of date, that the owner's operating costs are mounting and profits correspondingly decreasing.

To superintendents and operating engineers of such plants the National Power Show should have a special appeal as a means of informing themselves on the latest phases of power plant equipment and by comparison with their own plant needs be in a position to go to their superiors with a definite plan of rehabilitation, thereby establishiing savings in operating costs and more satisfactory operation.

The National Power Show serves as a post graduate course for manufacturers, superintendents, mechanical and operating engineers and others in charge of production who are desirous of keeping abreast of the times in engineering progress and by discussion, examination and observation becoming conversant with the last word in equipment which is productive of mental and financial benefit.

At the Power Show one meets the men who are responsible for production in all types of plants. The days of secrecy in industrial plants are relics of an almost forgotten past. There was a time when visitors were about as welcome as the proverbial insurance solicitor. But things have changed. There is a new era of open mindedness. The factory man today is glad to have you drop in because he feels that he will get as much out of the interview as you do.

At the Power Show producers, consumers, engineers, superintendents and others in the field meet on a common ground and in establishing a sort of business and social relationship, mutual benefit results.

An important factor entering into the remarkable growth of the National Power Show can be traced to new developments in the field. Never in the history of science has there been such rapid and exceptional advancement in mechanical engineering equipment as during the years the exposition has been functioning.

There have been more inventions and more improvements in these few years than ever before and it is these improvements and inventions which will furnish stimulus and zest in the competitive reciprocity between producer and consumer at the exposition.

From a list of over 400 corporations which have already reserved space, this year's exhibits may well be grouped into three general classes: first, new developments, comprising new inventions, new processes and new ideas; second, improvements on old principles and third, those grouped under engineering staples.

However, progress, as represented by the first group is the inherent characteristic of what may be expected at this year's show. New developments and better ways of doing things, side by side with the staples produces a sort of melting pot where visitors and exhibitors are afforded an opportunity of becoming better acquainted.

Competitive business, in other words, is placed on a more intimate footing. Producer and consumer meet under unique conditions to see, to compare and to understand the different products and processes. The National Power Show disseminates knowledge of mechanical advancement for the benefit and inspiration of those both inside and outside of the engineering profession. It keeps one posted on the latest developments and methods of operation and affords an opportunity of actually seeing the equipment and instruments in action.

## Valdosta May Get Pulp Plant

VALDOSTA, Ga., September 16, 1929.—The Chamber of Commerce expects some definite information soon regarding the proposed location in or near Valdosta of a large paper manufacturing plant.

Recently Emmanuel Morgan, of Morgan & Co., of Jackson, Miss., consulting engineer, was here in company with Robert Thomas, of Lake, Miss., making a very thorough survey of the city and section with a view of finding a location for a paper mill which the firm Mr. Thomas is connected with proposes to establish in South Georgia. A number of days were spent here in looking into the supply of wood, both pine and hardwood, available for manufacturing into paper pulp. The supply was found to be amply sufficient for the purpose, and the only question left to be determined was the chemical analysis of the water. Samples of water from all sources were secured and sent away for analysis, and the reports on these samples will largely determine the action of the company.

Before leaving Valdosta the prospectors both declared that everything needed had been found in Valdosta with the possible exception of the water, and they were of the opinion that this problem could be solved. The proposed plant, it was stated, would be of a capacity to manufacture 150 tons per day and about eight hundred persons would be given employment. Of the hardwoods it was stated that sweet gum was the most desired, and this was found in such abundance that the two gentlemen declared the supply was unlimited.

Mr. Morgan, who is well known in engineering circles, stated that this was not a promotion project, but a bona fide effort to secure a location of a satisfactory nature for the location of a very large industry and one that would be worth considerable to this city.

## German Mill Officials Visit Glens Falls

Karl Bauer, mill manager of Kubler & Niethammer, of Kriebstein, Germany, and the two sons of Mr. Niethammer, are on a visit to the pulp and paper mills in the United States and Canada. The party recently visited the plant of the Trimby Machine Works at Glens Falls, N. Y., and also called at the Finch, Pruyn & Co., plant near by, where they witnessed a demonstration of several new machines manufactured by the Trimby Machine Works. Incidentally, Kubler & Niethammer were one of the first paper manufacturers in Germany to install the Trimby proportioning and metering system.

## Master Printers Explain Waste Paper Bureau

CHICAGO, September 16, 1929.

Editor PAPER TRADE JOURNAL:—

Our attention has been called to the fact that there are circulating several reports regarding our activities in the waste paper field.

In order that those interested may be fully conversant with the facts, the executive council of the Master Printers' Federation has issued a statement which explains fully the reasons why this association is handling waste paper.

The statement referred to is enclosed on a separate sheet and we will be pleased to supply any additional information regarding the matter.

S. F. BEATTY, Managing Secretary,
Master Printers' Federation of Chicago.

The statement mentioned in the letter follows:

"A Waste Paper Bureau was established by the Master Printers' Federation of Chicago in September, 1926, because of unfair tactics adopted by some of the Chicago waste paper dealers.

"This condition was brought to light by complaints received from members and verified by a survey made in the summer of 1926.

"The Master Printers' Federation is an independent local association whose sole object is to improve conditions for printers in the metropolitan area of Chicago. We are not affiliated with any National Association and have no interests outside of Illinois.

"Our principal activities consist of promoting, installing and supervising Cost Finding Systems in the plants of members; in supplying credit and collection information; in gathering, compiling and disseminating statistics on costs and production as they exist in connection with the various operations involved in producing printing in Chicago.

"We have handled waste paper collectively through our Bureau continuously since September, 1926, in order to protect our members in the matter of prices which are based on the mill market prices paid to dealers.

"To avoid continuous trouble regarding service and price fluctuations the Building Managers Association of Chicago recently requested us to handle the waste paper accumulation of some of their members. This arrangement was made as a protective measure for building managers.

"We have no intention or desire to extend our activities as far as waste paper is concerned to points outside of Chicago and all we are interested in is to secure fair and reasonable prices for the various grades of waste paper accumulated by our members.

"At the present time our waste paper is handled through two local dealers, namely, the General Fiber Company and the Ajax Waste Paper Company.

"There is no secret regarding the manner in which waste paper is handled through the Waste Paper Bureau of our organization and anyone interested in obtaining additional details may do so by communicating with the Secretary."

## Start Work on Portland Chemical Plant

PORTLAND, Ore., September 14, 1929.—Construction work on the first unit of the $300,000 project for the Paper Makers' Chemical Corporation recently announced for Portland, was definitely started September 10 when H. A. Stunkard, plant engineer for the company, authorized the breaking of ground. Plans for the building were drawn by Mr. Stunkard before he arrived in Portland to supervise the construction of the building. He has been consulting engineer for the corporation for many years in the headquarters at Atlanta, Ga., and will return there after completion of the Portland plant, which will be permanently under the management of a man yet to be appointed.

The new plant will be completed in about 90 days according to Mr. Stunkard. Its main item of production in Portland at present will be rosin size which will be manufactured in sufficient quantities to supply the entire western market.

# VIGILANCE

IT is a fixed principle with the Mathieson organization that each department must be ever watchful, constantly seeking new ways of serving customers better. There is the same vigilance in making certain that each shipment exemplifies Mathieson's promptness in serving...the same vigilance in endeavoring to make each product represent the highest possible value...the same vigilance in seeing that every user of Mathieson products derives the utmost in satisfaction. These are features of a nation-wide service that meets the exacting needs of more than a score of leading industries.

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Coumarin
Vanillin

# MATHIESON CHEMICALS

Section of the
Technical Association of the Pulp and Paper Industry

AN ORGANIZATION FOR THE ENCOURAGEMENT OF ORIGINAL INVESTIGATION AND RESEARCH WORK IN MILL ENGINEERING AND THE CHEMISTRY OF PAPER, CELLULOSE AND PAPER-MAKING FIBERS GENERALLY; IT AIMS TO PROVIDE MEANS FOR THE INTERCHANGE OF IDEAS AMONG ITS MEMBERS IN ORDER THAT PROCESSES OF MANUFACTURE MAY BE MADE MORE EFFICIENT AND IMPROVED ALONG TECHNICAL LINES.

Edited by
RONALD G. MACDONALD, Secretary

# Current Paper Trade Literature

## Abstracts of Articles and Notes of Papermaking Inventions Compiled by the Committee on Abstracts of Literature of the Technical Association of the Pulp and Paper Industry

Clarence J. West, Chairman

### Pulp Analysis and Testing

**Photomicrographs of Groundwood Pulp.** E. Öman and B. Segring. Svensk Pap-Tidn. *31* 438-441 (1928). Coal black, G. (Lolsvart G.) stained groundwood so that more clear cut negatives were obtained than with the following stains: Rodamine R. extra; fuchsin and HCl; safranin; chloramine black and alum. 1% solutions of dye and magnifications of 25 x show clear distinctions between different pulps, and is a valuable adjunct to the freeness test in determining quality of groundwood pulp.—C. E. P.

**Determination of Mechanical Wood Pulp in Paper by the Phloroglucinol Method.** Korn Zellstoff u. Papier 7, 315-319 (1927). Absorption of phloroglucinal reagent by groundwood fibers in paper is not constant but there is little error at the end of 24 hours. Factors for calculating results are given as 6.48 for mechanical pulps and, 1.121 for sulphite pulps, while Krull and Mandelkow found 7.84 and 1.34 for similar pulps. The purity of the reagent appears to play a role in the determination of these factors. The calculated results are supposed to be very accurate and between the limits of 40 and 70 percent groundwood in paper the chemical procedure is more desirable than the microscopical estimation.—C.J.W.

**Testing the Bleaching Quality of Wood Pulps.** H. L. Joachim. Zellstuff u. Papier 7, 361-362 (1927).—A permanganate method for testing the bleach consumption of pulps is described which yields results in 20 minutes. Ten grams of air-dry pulp is suspended in one liter of water by stirring and the temperature adjusted in a water bath to 37° C. 25 cc. dilute sulphuric acid (1:4) are added and the mass is stirred with an automatic stirrer. Twenty-five cc. normal potassium are run in through the lid of the container while the stirrer is in motion. After exactly 7 minutes oxalic acid is run into the jar from a buret and the excess permanganate destroyed. The acid should be added 0.5 cc. every 30 seconds until the end point is approached. The relationship between the result obtained from the titration and the amount of bleach required for a pulp will depend upon mill practice and the type of pulp produced. Comparative tests are given with the permanganate method of Johnsen and Parsons and the chlorine method of Roe.—C. J. W.

**Swelling Capacity of Bleached Sulphite Cellulose.** W. Nippe. Papierfabr. 26, 501-506 (1928).—The swelling capacity is determined hygroscophically by means of an air current the moisture capacity of which is maintained by means of saturated salt solutions. Severe chemical treatment in the digestion process reduce the swelling capacity of the cellulose; drying has a similar effect. The presence of hydrocellulose and oxycellulose tends to decrease rather than increase the swelling capacity. Comparison of this and other existing methods is made and the use of such measurements in works control is suggested.—C. J. W.

**Effect of Fine Division on the Copper Number of Cellulose.** K. G. Jonas. Z. angew. Chem. 960-961 (1928) Soaking in water does not affect the copper number of soda or sulphite cellulose but there is a notable difference between the values for soda cellulose filings (5.32) teased cellulose (5.39) and beaten cellulose (5.27) on the one hand and cellulose cut into pieces 0.6 cm. square (6.35) on the other; the corresponding values for sulphite cellulose are 2.27, 2.52, 2.25, and 3.40. Beaten cellulose is in the best form for determination of the copper number since it is more easily and rapidly weighed the nature of the fiber is unchanged and the cuprous oxide is very readily dissolved out by ferric sulphate and sulphuric acid.—C. J. W.

**Determination of the Copper Number.** Carl G. Schwalbe. Papierfabr. 25, 157-167 (1927).—Schwalbe's copper number determination and its numerous modifications are discussed. The alkali boil test of Cross and Bevan and the boil-off number of Kaufmann, for determining cellulose degradation products are also included. Seventeen references are listed.—C. J. W.

**Determination of the Chlorine Consumption Number of Pulps.** A. Ehrenfried. Paperfabr. 25, 130-131 (1927).—To 5 grams of dry pulp (21 grams wet) add distilled water and sufficient bleach solution to give 6 percent available chlorine calculated on the pulp. After one hour at 20° C. filter and test 50 cc. in the following manner: Add 20 cc. 0.1 normal arsenic trioxide and 3.5 drops methy orange indicator. Acidify with 10-15 cc. concentrated hydrochloric acid and titrate with 0.1 normal potassium bromate (2.7837 grams per liter) until the red color disappears. The comparative relation between the cc. of 0.1 normal potassium bromate and the chlorine consumption number is tabulated.—C. J. W.

# Bibliography of Wood Pulp Strength Testing *

By W. F. Moore [1]

No. 1. Festigkeit von Papierhalbstoffen (Strength of Paper Halfstuffs)—By G. Dalen. Papier Zeitung 31, No. 71, 2939-41 (Sept. 6, 1906); Wochbl. Papierfabr. 37, 2487 (1906); Mitt. Klg. Material 23, No. 6, 279-85 (1905).

The necessity for the strength testing of halfstuffs is emphasized. The equipment consists of a 1 kg. capacity Hollander, a hand sheet mold, an hydraulic press and a steam heated drying cylinder. Sheets are made by "dipping." Six halfstuffs are reported. They were beaten for various periods of time, using "heavy beating" and light brushing. Sized and unsized sheets were tested after air drying, and after drying on the steam heated drying cylinder. Tensile, elongation and folding endurance tests (all using Schopper equipment) were made. The sheet size and the basis weight are not given.

No. 2. Judging the Strength of Halfstuffs—G. Dalen. Paper Maker 50, no. 2:161 (Aug., 1915); Paper Making 34, no. 1:481 (Jan., 1915); Paper Trade J. 59, no. 16:44 (Oct. 15, 1914); 61, no. 11:52 (Sept. 9, 1915).

An investigation was undertaken to study the effect of shaking the hand mold while dipping to make hand sheets. The results showed that a stronger hand sheet was produced if the mold was shaken. Tests were also made to discover the accuracy of a beating test for pulp. It was found that by carefully regulating beating conditions reproducible results were obtainable. When using the same pulp it was found that the strength properties of hand sheets compared favorably with those secured from machine made paper, thus proving that laboratory figures could be directly comparable with mill practice.

No. 3. A Beating Test for Papermaking Fibers—E. Sutermeister. Paper 17:11-18 (Nov. 10, 1915).

Sutermeister goes into great detail showing results of his initial work in developing the porcelain pebble mill for the strength testing of wood pulp. He studied thoroughly the effect of ash, temperature, pressure, and other such factors affecting strength and explains his results fully. His procedure is essentially the starting point of the TAPPI standard given out in 1916 and which is described elsewhere in this review.

No. 4. Testing Mechanical Pulp for Strength—Paul Ebbinghaus. Paper 17, no. 1:19 (Sept. 15, 1915); World's Paper Trade Rev. 64, no. 18:708 (Oct. 29, 1915); Paper Makers' Mo. J. 53, no. 10:317 (Oct. 15, 1915).

A simple method for testing ground wood pulp is described. The test is an unbeaten test, the sample being disintegrated and made into hand sheets which are subsequently tested on a Rehle paper strength tester. The method described proved very satisfactory for technical control work.

No. 5. The Effect of Certain Chemicals on the Time of Beating—Everett K. Mansfield and J. Newell Stephenson. Pulp and Paper Mag. of Canada, Vol. 13, 325-327 (Oct. 1, 1916).

The object of this paper was to ascertain whether there was any chemical compound that would exert an influence on the beating of paper in the way of a catalyst. A blank was made from 50 g. of pulp beaten in a ball mill for one hour and diluted to 0.5 per cent consistency. Similar conditions were used for the chemical work which consisted in adding salts which easily hydrolyze, alkalies, and dilute acids. It was found that NaOH, $Na_2CO_3$, $NH_3$ and $ZnCl_2$ produced stronger paper, the carbonate and ammonia being the best.

The use of acids causes weak and brittle paper. The cost of ammonia prohibits its use commercially. Sodium carbonate in amounts of 5 per cent on the basis of the pulp gives stronger paper and cuts down beating time with subsequent reduction of power costs. Experimental runs were also made with a beater to try to duplicate mill conditions.

No. 6. Testing Pulp for Color and Strength—R. B. Wolf. Paper 19, no. 9:11-19 (Nov. 8, 1916).

The original standard method of TAPPI makes use of the following procedure: The pulp sample consisting of about 380 g. of wet pulp is made up into slush form and pressed into several discs by means of a 10,000 pound concrete block. The pressing is for five minutes. The discs have a moisture content uniform enough so that 151 g. is the equivalent of 100 g. of A.D. pulp. The sample is hand kneaded with two liters of water and beaten for 50 minutes at 60 r.p.m. with a charge of pebbles having a displacement of 1,780 cc. The beaten sample is diluted to a volume of 20 liters with water and hand sheets made on a hand mold. These are pressed between felts for two minutes on a letter press and allowed to dry on racks through which hot air is blown. The sheets, 7 by 9 inches, are then pressed in the letter press for two or three minutes to smooth them out and then weighed. In testing, the sheets are cut in half and four breaks made on each half sheet with an Ashcroft tester. This gives a total of 32 breaks to average. The results are reported according to the formula:

$$\text{Unit weight test} = \frac{\text{Sum of 32 readings}}{2\ (\text{weight of 4 sheets})}$$

*Size of Test Sheets* .....7 x 9 inches
*Basis Weight* (25 x 40—500) .....Approx. 68-83 pounds

No. 7. Testing the Color and Strength of Sulphite Pulp—Charles W. Reiser. Paper 20, no. 12:35-37 (May 30, 1917).

The test sheets were made on a hand mold and couched by means of felts. A layer of sheets and felts were pressed in a letter press for two minutes and air-dried overnight at 100-120 degrees F. Reiser found that the "balling up" action of the ball mill caused serious trouble in sheet making. The testing was done on an Ashcroft tester which was found to be an awkward instrument for this work as it was impossible to tell when it was not recording accurately and it is difficult to repair. The results were reported according to the following formula:

$$\frac{\text{Sum of 16 breaks}}{\text{Wt. of 4 sheets}} = \text{Strength Factor}$$

The use of this increases the accuracy of results as the weight is a factor and eliminates error due to moisture variation in the sheet. It was proved that the weight and strength of the sheets are not straight line functions.

*Size of Test Sheets* .....4 x 7 inches

No. 8. Determining the Strength of Pulp—E. C. Tucker. Paper Trade J. 65, no. 14:20, 22 (Oct. 4, 1917); Paper Making 37, no. 1:12, 14-15 (Jan., 1918).

Six samples comprising 100 grams of air dry stock each were diluted with two liters of water and disintegrated with a home

* Reprints of this bibliography are obtainable through the Technical Association of the Pulp and Paper Industry, 18 East 41 street, New York, N. Y.

[1] Junior Member TAPPI; Chemist, U. S. Testing Company, 316 Hudson street, New York, N. Y.

This work constitutes one of the initial steps of the Committee on Physical Standards for Pulp of the Technical Association of the Pulp and Paper Industry in its effort to aid in standardizing a definite procedure for wood pulp strength testing.

In preparing this review the author wishes to acknowledge the aid secured from the bibliography on Strength Testing by C. J. West, which is contained in his recent book entitled Bibliography of Paper Making and also from the articles contained in the Chemical Abstracts, some of which it was necessary to abstract verbatum.

In order not to make this review too lengthy many articles on testing wood pulp which do not deal directly with strength testing were left out.

made disintegrator. One sample was used for an unbeaten test and the others beaten for periods of 10, 20, 30, 40 and 50 minutes in a pebble mill. The procedure was essentially the same as the TAPPI standard. The sheets were pressed for two minutes in a letter press and air dried on racks overnight. On practically every sample of pulp tested maximum strength was reached in forty minutes. Wet samples were found to hydrate much faster than dry samples. Conclusions reached were that the unbeaten test was no indication of the beating qualities of a pulp.

*Size of Test Sheets* .....4 x 7 inches
*Basis Weight* (25 x 40—500) .....Approx. 70-80 pounds

No. 9. Determining the Strength of Pulps—R. S. Hatch. Paper 21, no. 4:40, 44 (Oct. 3, 1917); Paper Mill 40, no. 41:16, 44 (Oct. 13, 1917); Pulp and Paper Mag. of Canada 15, no. 49:1133-1134 (Dec. 6, 1917).

Formerly pulps were kneaded by hand for preliminary disintegration. The author makes use of a home made disintegrator for the first time, obtaining good disintegration without hydration in thirty minutes. One hundred grams of pulp with two liters of water were beaten for intervals of 10, 20, 30, 40 and 50 minutes each. The pulp was then cleared with the disintegrator for a short time. Hand sheets were made with a hand mold, pressed for two minutes in a letter press, and dried on a wire rack overnight. The sheets were then trimmed and weighed. Experimentation showed the beating curve to be a fairly straight line with a gradual decrease after a certain beating period. Conclusions reached were that unbeaten tests are no indications of the beating qualities of a pulp. The strength of lap pulp is developed quicker than that of dry pulp.

*Size of Test Sheets* .....4 x 7 inches

No. 10. Beating Test—E. Sutermeister. Paper 23:11-13 (Dec. 11, 1918).

The line of procedure followed by Sutermeister is very similar to that of Mansfield and Stephenson in that he worked on the effect of various chemicals upon soda and sulphite papers. On soda fibers it was found that after allowing the pulp to soak in various chemical solutions for from 1 to 3 weeks, the only increase in strength was that in which the pulp had been allowed to stand in water. In the case of sulphite bleached fiber and hydrochloric acid, at first the soaking increases the strength up to its original weight, but further soaking caused a very marked decrease. In all the other tests, water and solutions of calcium, sodium and zinc chlorides cause decided increases in strength. Additional tests with a foreign bleached sulphite indicated that the gain in strength on soaking in a solution of zinc or sodium chloride practically reached a maximum in from 4 to 7 days and that beyond that time further soaking caused no change.

This brought up the question of effect on strength when fiber was stored dry in bales or rolls and weighed in drainers or laps. A sample of dry unbleached sulphite was stored where exposed to all normal conditions of humidity from October, 1913, to July, 1917, and during this period frequent beating tests were performed. Initial strength—34.8 pounds. Final strength—22.9 pounds. This decrease in strength was accompanied by a change in the fiber which made it less water absorbent and far harder to break up into pulp.

In contrast to this test were the results of two others, one with a filler containing 50 per cent moisture and the other with 21½ per cent. These two lots were stored in air tight jars and their bursting strengths remained constant for 1½ and 2½ year periods, respectively.

Sutermeister comments briefly on an article by R. S. Hatch, Paper, October 3, 1917, in which Hatch complains about fibers tending to knot and ball up in the ball mill. This is probably explained by the fact that variations in the size of the jars cause different results. Sutermeister says that if two jars are used their proper charges must be determined by experimenting if the same results are to be obtained from each.

The comment is made on the reliability of expressing results in points per pound when using a hand mold instead of a sheet machine. The opinion is that the method is more reliable in the case of a free stock than in the case of a slow or greasy stock. This was followed by experimentation showing the advantage of the sheet mold over the hand mold, the sheet mold giving a constant weight sheet. With the constant weight sheets Sutermeister's experiments showed that he obtained no break in the strength curve at the end of 8-hour beating period. This, he says, illustrates the error in calculating the strength to a constant weight basis and proves that the strength weight factor is not a constant.

No. 11. Testing Sulphate Pulp for Strength—K. G. Wilen. Pulp and Paper Mag. of Canada 18, no. 47:1181-1184 (Nov. 18, 1920); Paper 27, no. 17:15-17, 36 (Dec. 29, 1920); Paper Trade J. 71, no. 20:30-34 (Nov. 11, 1920); Paper Maker's Mo. J. 59, no. 1: 13, 15, 17, 19 (Jan. 15, 1921); Zellstoff u. Papier 1, no. 3:86-87 (June 1, 1921); C. A. 15:313.

The method of TAPPI, Paper, Nov. 8, 1916, was found unsuitable for kraft so the following was adopted:

Twenty-five grams of air dry pulp was broken up by screening on a screen provided with 1/16 inch holes. The pulp was made up to three kgs. with water and beaten in a pebble mill, each jar of which was charged with 250 pebbles weighing 2,500 grams. The pulp was then beaten for one hour at 66 r.p.m. and made up to ten liters with water. Three measures of 450 cc. each were used for sheets and made up to about five liters. The sheets were made on a sheet mold and couched off by means of a wooden rocker. A pile of five sheets thus made were pressed in a letter press for fifteen seconds at full pressure and dried on wire trays at 180 degrees F. They were then air-dried for one hour, trimmed, weighed and calculated to a 24 x 36—480 basis, and tested. The results were reported as follows:

$$\frac{\text{The Average Mullen of 5 Breaks}}{\text{Ream Weight}} \times 100 = \%\ \text{Pts./lb.}$$

The conclusions reached were: The effect of the moisture content of pulp before testing showed that moist samples hydrated, gave higher strength than dry pulps. Concentration of pulp in the ball mill unless varied to a great extent does not appreciably affect results. Fifty to sixty pound sheets give best results as regards uniformity of formation and strength. Variations of 100 grams in the weight of the pebbles does not affect strength appreciably. Hydration is a straight line function of beating time, although further beating after maximum strength is reached has little effect on the pulp. Sheets are not noticeably weakened by drying in the oven below 200 degrees F. The pressure used in couching sheets has little, if any, effect on strength, but a 12 per cent increase was found when sheets were pressed in a 500 ton baling press instead of the usual letter press.

*Size of Test Sheets* .....6 x 6 inches
*Basis Weight* (25 x 40—500) .....Approx. 72 pounds

No. 12. Strength Testing of Soda Pulp—Ralph Mair and Grellet N. Collins. Tech. Assoc. Papers 4, no. 1:6-7, 29 (1921); C. A. 16:1315.

The method used was essentially the same as that established by TAPPI. The sheets were trimmed 6 x 7 inches and four such sheets weighed 20 grams. Sheets were pressed between felts in a letter press for two minutes and then air dried. In testing they were cut in half and four breaks made on the half sheet with an Ashcroft tester. The results were expressed as follows:

$$\frac{\text{Sum of 16 breaks}}{\text{Weight of 4 sheets}} = \text{Unit weight test}$$

The authors found that wet stock gave a higher burst than the same stock air dried. Soda pulps tested appear to reach a maximum strength in about 35 minutes. Bleaching does not seem to weaken the pulp when in the wet state but when air dried it weakens somewhat. The tests show that two pulps can only be

compared in a fair way if they are in the same condition.
*Size of Test Sheets* .....6 x 7 inches
*Basis Weight* (25 x 40—500) .....Approx. 131 pounds

No. 13. Das Schöpfen von Handmusten in Laboratorium (Dipping of Handsheets in the Laboratory)—By Th. E. Blasweiler. Papierfabrikant 19, no. 15, 344-6 (April 15, 1921).

The paper is intended as an answer and a discussion of Bachelder's "Pulp Evaluation as Affected by the Fiber Ratio in Test Sheets," Paper 27, No. 11, 14-9, Nov. 17, 1920 (and elsewhere) in which it is stated that it is impossible to make uniform test sheets by hand dipping.

Blasweiler reports on hand-dipped sheets using a stock concentration in the vat of about 0.1-0.2 per cent. The stock is well stirred and the pulp "dipped" on the hand mold. Various dipping methods are described. The mold is then inverted on a wet felt and the sheet removed by pressing on the mold. A wet felt is placed on the sheet and the process repeated. The stack of felts containing 8-10 sheets, or even more, is then placed between zinc plates and pressed in a screw press, applying the pressure gradually so as to allow the water to drain off, too quick application of the pressure results in weak sheets which still contain considerable water. If properly pressed the moisture content of the sheets is approximately that of the web of paper after passing the third wet press of the paper machine. Sheets so prepared had good appearance, formation, uniform caliper, and were free of weak spots.

*Size of Test Sheets*.....10 x 18 cm. (3.94 x 7.09 inches) and 18.5 x 24 cm. (7.28 x 9.45 inches). The basis weight of the sheets is not given.

No. 14. Pulp Evaluation as Affected by the Fiber Ratio in the Test Sheets—C. L. Bachelder. Paper Ind. 2, no. 10:1555, 1557, 1559, 1561, 1563 (Jan., 1921); Paper 27, no. 11:14-19 (Nov. 17, 1920); Paper Trade J. 71, no. 21:150-162, 174 (Nov. 18, 1920); World's Paper Trade Rev. 75, no. 3:258, 260 (Jan. 21, 1921); C. A. 15:1214.

The method of evaluating pulp by obtaining the bursting strength of hand sheets has a number of objectionable features such as a personal equation, a machine direction to the fibers, and an uneven sheet. Good results were obtained by sinking the mold to the bottom of the vat and, after the stock had been stirred carefully in order to eliminate currents and time had been allowed for violent agitation to cease, raising the mold vertically. Better results were obtained by use of a suction mold, whereby the inaccuracies from personal equation, machine direction, and uneven sheets are reduced to a minimum and the fiber direction, which is the controlling factor in strength test, is more nearly perfect than in sheets made by any other method.

No. 15. Strength Properties of Hand Made Paper Samples—Th. E. Blasweiler. Papierfabr. 20, no. 7:193-197 (Feb. 19, 1922); Paper Trade J. 74, no. 25:57; C. A. 16:1666.

Tables are given showing the results of a number of tests on various samples of hand-made paper and comparison of these with machine made paper. The effect of various sizing agents was also studied.

No. 16. Routine Methods for the Examination of Wood Pulp Adopted at the Forest Products Laboratories of Canada—E. P. Cameron. Pulp and Paper Mag. of Canada, Dec. 21, 1922.

*Unbeaten Test*—Disintegrate approximately 200 grams of pulp, air dry, and dilute to 0.5 per cent consistency to make test sheets. Take 1,000 cc. of this and dilute to approximately three liters and pour into sheet mold. Sheets are pressed in a letter press at full pressure for two minutes and then air dried. The dried sheets are trimmed 4 by 7 inches, weighed and placed in a humidity room at 50 per cent humidity for five hours. Four sheets with five bursts per sheet are used per test and results are reported in per cent points per pound per ream 24 x 36—500.

*Beaten Test*—Use 100 grams of air dry stock and dilute to two kgs. with water. Stock is then beaten for fifty minutes at fifty r.p.m. in a Model C, Abbe ball mill. After beating the stock is disintegrated for five minutes to remove lumps, after which it is diluted to 0.5 per cent consistency preparatory to sheet making. Hand sheets are pressed, weighed, and tested as described under the unbeaten test.
*Size of Test Sheets* .....4 x 7 inches
*Basis Weight* (25 x 40—500) .....Approx. 70-80 pounds

No. 17. The Determination of the Effect of Pressure on the Strength of Test Sheets in the Strength Testing of Pulp—E. P. Cameron. Pulp and Paper Mag. of Canada 21, no. 5:127-135 (Feb. 1, 1923); Paper Mill 47, no. 6:14, 16, 18, 20, 38, 40 (Feb. 10, 1923); Paper Industry 4, no. 12:1685-1686, 1689-1692 (Mar., 1923); C. A. 17:1139; T. S. 76:239.

From the results of this series of tests it seems imperative that the basis weight of the sheets used and pressures applied in the formation of hand sheets should be definitely standardized.

Variations in pressures caused variations in ultimate strength of test sheets. This work was carried out using one variety of pulp and a very large range of pressures. The general trend showed that the strength increased with increases of pressures, the increase being more marked for the lower than for the higher pressures. The effect of variations in basis weights and initial moisture contents of the sheets before testing were also studied in relation to pressures. The conclusions reached were that the pressure and basis weights having such a marked effect on hand sheets, they should be definitely standardized.

No. 18. Relative Strength of Sheet Machine and Hand-Mold Sheets—E. Sutermeister. Paper Ind. 4, no. 12:1661-1662 (Mar., 1923); C. A. 17:1715; T. S. 76:186.

The sheet machine will give sheets of practically constant weight regardless of time of beating, within reasonable limits. There is no possibility of calculating from the tests on hand-mold sheets what those on machine-made sheets would be. Wherever possible, the use of the hand mold for quantity work should be abandoned.

No. 19. Testing the Strength of Pulps—Sindall and Bacon. World's Paper Trade Rev. 79, no. 15:1268-1278, 1292-1298 (April 13, 1923); Paper Makers' Mo. J. 61, no. 4:155-160 (April 16, 1923); Paper Maker 75:586-591 (May 1, 1923); Intern. No., 1922-1923:45, 49; Paper Trade J. 77, no. 8:46-49 (Aug. 23, 1923); Paper Making 42:160-165 (May, 1923); Paper 32, no. 5:9-10, 21 (May 23, 1923); T. S. 77:161.

It was found by experimentation that heavy sheets give higher strength results when reported in points per pound basis weight than do light sheets. It is necessary, therefore, to standardize carefully on the basis weight of test sheets when adopting a standard method of testing wood pulp for strength. Tests were made on the same brand of pulp in both bleached and unbleached conditions. The results showed that bleached pulp gave higher strength figures than did the unbleached.

No. 20. Testing the Strength of Pulps—By R. W. Sindall. Proc. of the Tech. Sect. Paper Makers Assoc. of Gr. Brit. & Ireland 4, Part I, 5-19 (with discussion), September, 1923.

Mullen and Ashcroft tests were made directly on dry pulp sheets weighing 382-792 gms./m.² (272-565 lbs., 25 x 40—500); the tests varied from 60-142 lbs. for Mullen and 75-122 lbs. for Ashcroft. Bursting strength per 100 gms. per square meter varied from 12.8-19.4. Tests unreliable because pulp sheet consists of clots of pulp non-uniformly distributed, also because sheet pulp often ribbed.

Sheets were then made using unbeaten pulp and pulp beaten in a Hollander 18 inches long by 12 inches wide with a 6 inch roll making 280 r.p.m. using a pulp consistency of 2.5 per cent.

Sheets hand dipped on mold 4¼ inches by 5¼ inches, pulp in vat 50 gms. in 10,000 cc. (5.05 per cent). Unbeaten pulp sheets

weighed 388-495 gms./m.² (277-354 lbs., 25 x 40—500). The effect of pressing was noted. Light weight sheets 230-312 gms./m.² (164-223 lbs., 25x40—500) were also made for comparison with the heavier. In this case 20 gms. of pulp in 10,000 cc. (.02 per cent) was used in the vat. Beating tests included sampling at 15 minute intervals up to 1 hour. Freeness was measured on a sedimentation tester. Pulp beaten for 60 minutes and 30 minutes—for 45 minutes and 15 minutes were mixed. The effect of testing wet and dry and machine dried pulp is discussed.

*Size of Test Sheets* .....4¼ by 5¼ inches
*Basis Weight* (25 x 40—500) .....Approx. 164-354 pounds

No. 21. Testing of Chemical Wood Pulps for Strength—Arthur Baker and James Jennison. Proc. Tech. Sect., Papermakers' Assoc. Gt. Britain and Ireland 4, pt. 2:185-204 (Mar., 1924); Zellstoff u. Papier 4, no. 2:22 (Feb., 1924); Paper Maker 67, no. 1:23-25, 27, 29 (Jan., 1924); Paper Mill 48, no. 3:26, 28, 30; no. 4:28, 30 (Jan. 19, 26, 1924); Paper Makers' Mo. J. 62, no. 1: 21-27 (Jan. 15, 1924); C. A. 18:1051; World's Paper Trade Rev. 80, no. 25:2040, 2042, 2044, 2046, 2048 (Dec. 21, 1923).

The following conclusions are given for a method for testing wood pulps for strength:

1. Wilen sheet machine is accepted as a good standard.

2. Disintegrator should break up pulp without appreciable hydration. It should imitate the beating action under conditions easily and readily repeated by different workers, allow beating tests to be carried out on densities of five to six per cent. The ball mill is not entirely satisfactory when called upon to deal with cylinder dried pulp and has other limitations.

3. It is possible to determine by laboratory tests the strength of unbeaten pulp but the results of such strength tests are very limited in valne and in general application.

4. It is possible to determine the strength of beaten pulp by laboratory tests under strictly regulated conditions having regard to the purpose to which the pulp is to be applied. The strength of beaten pulp bears no specific relation to the strength in unbeaten pulp.

5. In order to obtain a true idea of the possibilities as to strength inherent in any pulp, it is necessary to make tests upon both beaten and unbeaten stock.

6. A standard test for determining the strength of chemical pulp under the methods used in Mr. Sindall's experiments will give unreliable results in the hands of different workers. But, nevertheless, a laboratory test can be devised which will have a definite and practical value for the particular laboratory and paper mill in which the test was performed.

The authors were definitely of the opinion that for the purpose of determining the strength characteristics of pulp, physical tests cannot be applied to the small sheets of pulp without the work involved in using some experimental type of beater and of converting the pulp into paper.

7. From a strength point of view the order of merit of a series of air dry chemical pulps depends largely upon the history of the pulps in question and the kind of water of imbibition in the original pulp before drying.

No. 22. The Effect of Pressure on the Strength of Test Sheets in the Strength Testing of Pulp—E. P. Cameron and J. M. Payne. Paper 33, no. 17:5-11 (Feb. 14, 1924); Pulp and Paper Mag. of Canada, 22, no. 3:53-60 (Jan. 17, 1924); Paper Makers' Mo. J. 62, no. 3:105 (Mar. 15, 1924); C. A. 18:902.

A very thorough study was made using groundwood, bleached and unbleached sulphite, and kraft. The following conclusions were reached:

It is imperative that the pressure applied to the sheet during formation be definitely standardized. A pressure of 200 lbs. per sq. in. was found ample to insure that the effect would be regular for all pulps tested and, although this could safely be reduced yet from the point of view of reliability of the test, a pressure of at least this amount should be used.

The effect of variations in the basis weight of the sheet is not sufficient to counteract the advantage of a single basis weight for all pulps and, from the results obtained, that of 60 pounds seems most satisfactory. It is therefore recommended that these two factors (pressure and weight) be specifically stated in any standard method for strength testing of wood pulp, namely:

1. Basis weight to be 60 pounds per newsprint ream.

2. That in the formation of test sheets a pressure of 200 pounds per square inch be maintained for two minutes.

*Basis Weight* (25 x 40—500) .....Approx. 69.5 pounds

No. 23. The Hand Sheet Machine as a Means of Forming Test Sheets in the Strength Testing of Pulp—E. P. Cameron and J. M. Payne. Pulp and Paper Mag. of Canada 22, no. 14: 376-378 (April 3, 1924); no. 15:402-404 (April 10, 1924); T. S 79:146; C. A. 18:1567.

The three essential properties for a hand sheet are:

1. Constant weight.
2. Uniform formation.
3. Ample size for testing purposes.

The Wilen sheet machine, which makes a sheet 8 inches square, seems to fulfill the above requirements to date. A critical study of the apparatus was made over a period of two years' use in the Forest Products Laboratories in Canada. Changes in design of the machine were made to see if they had any effect upon the making of hand sheets. The basis weights used ran from 60-70 pounds 24 x 36—500 and results were reported in per cent points per pound, 5 bursts per sheet and 5 sheets per test being recorded.

Variation in the mesh of the screen plate used and the suction applied was found to have no material influence on the strength of the sheet. Considerable difference was noted, however, in the amount of fiber present in the white water in the case of ground wood pulp.

A short suction pipe with an elbow pipe attached was found to decrease the fiber loss when compared with the results of a longer vertical pipe and for this reason it is to be preferred.

It seems unnecessary to fill the basin of the machine with water before making up the test sheet as no advantage can be claimed by so doing. Merely from the strength tests, no particular screen or suction can be designated as giving the most satisfactory results, but for standard purposes it seems desirable to select a screen and suction which brings the amount of fiber present in the white water to a minimum, namely, a 150 mesh screen using 8 pounds vertical suction pipe (1 inch diameter) with an 18 inch elbow pipe attached.

The above work was carried out on groundwood and sulphite pulps in both the beaten and unbeaten states.

*Basis Weight* (25 x 40—500) .....Approx. 69.5-81 pounds

No. 24. The Effect of Oven Drying on the Strength of Test Sheets—E. P. Cameron. Pulp and Paper Mag. of Canada 22, no. 17:448-450 (April 24, 1924); T. S. 79:146; C. A. 18:1906.

Considerable work was done on both kraft and sulphite pulps to show the moisture regain on hand sheets after oven drying. The relation between relative humidity and moisture absorption on sulphite pulp was also studied extensively. The results obtained can best be summed up in the author's own words: "It has been shown that: (1) Oven dried test sheets require from two to four hours' exposure to regain moisture to equilibrium of the atmosphere, the length of time required being dependent upon the nature of the pulp being tested. (2) That small changes in relative humidity give rise to large changes in percentage of moisture of the sheet. (3) That beaten and unbeaten stock and light and heavy weight sheets have little effect upon the time required to regain moisture and on the total moisture absorbed. (4) That oven dried sheets develop 10 to 15 per cent less strength than corresponding air dried sheets. (5) Temperatures up to 100 degrees C. have little effect on the strength of unbeaten pulp. This

may be increased to 120 degrees C. for beaten sheet without evident deterioration.

No. 25. The Effect of Oven Drying on Strength Test Sheets—E. Sutermeister. Paper Makers' Mo. J. 62, no. 7:298 (July 15, 1924); Pulp and Paper Mag. of Canada 22, no. 24:615 (June 12, 1924); T. S. 79:219; C. A. 18:2601.

Freedom to shrink during drying may have considerable effect on the strength of the sheet. Cameron found a difference of about 10 to 15 per cent between sheets that have been air-dried and oven-dried; while S. finds a difference of 25 to 43 per cent between air-dried sheets and sheets dried by holding against the surface of a drier by means of a tightly stretched felt.

No. 26. Some Observations on the Determination of the Strength of Cellulose—G. K. Bergman. Svensk Pappers-Tid. 27, 191-193, 215-218, 237-240 (1924); C. A. 18:3715.

The Finnish Lampen grinder, consisting of one large metal ball in a polished shell of ellipsoid shape, is compared with apparatus used in the United States and Canada. Several tables and twenty photographs show that the Lampen grinder is superior to the others in giving a stronger pulp.

No. 27. Method of Making Uniform Fiber Sheets for Test Purposes—Merle B. Shaw and George W. Bicking. Paper Trade J. 79, no. 21:51-53 (Nov. 20, 1924); C. A. 19:175; T. S. 80:189.

A sheet mold is described consisting essentially of a 10 x 12 x 6 inch deckle box, clamped to a screen plate, drilled with ½ inch holes and covered with a 10 mesh and with an 80 mesh wire, which rests on a mold support, fitted with a quick-opening gate valve which, for suction purposes, is connected to a steam ejector below. The sheet press was made by fastening the upright supports of a letter press to the base of a platform scale, so that the pressure applied could be measured by the weights added to the lever arm for balancing. The technique of operation is described in detail. Test data given indicate that sheets made in this manner are uniform, that the fibers are uniformly distributed, and that the apparatus as constructed eliminates the many undesirable features of the hand mold.

No. 28. Strength Testing of Chemical Wood Pulp—G. P. Genberg. Paper Trade J. 80, no. 6:177, 179, 181, 183, 185, 187, 191, 193 (Feb. 5, 1925); Paper 35, no. 17:84, 86, 88, 90, 92, 94 (Feb. 12, 1925); C. A. 19:1628; T. S. 81:70.

Genberg recommends carrying out a series of determinations by the ball mill method adopted by TAPPI modified as follows: Strength is determined on a series of samples after beating, 10, 20, 30 to 100 minutes, the dried sheets are trimmed to a given size, weighed, and the bursting strength (Ashcroft) is based on the same weight of a standard sheet. The results are plotted against beating time. Examples are given of the application of the method for determining strength and beating qualities of various grades and samples of wood pulps, the effect of drying the test sheets under tension as compared with drying freely, the relation between beating time, hydration, shrinkage on drying and strength, and the effect of wear of the ball mill jars on the strength. Pulp that has been beaten to maximum strength or over-beaten may give a sheet of equal or higher bursting strength when dried under tension than when dried freely. G. suggests that drying under tension would more nearly duplicate results obtained in mill operations. Bleaching lowers the strength of sulphite and makes it more easily hydrated. Wet lapped bleached sulphite is more easily hydrated than the same pulp which has been machine dried; but the maximum strength is practically identical. Wear of the ball mill jars increases the ash content of the pulp with increasing beating time, and lowers the final strength test.

No. 29. Proposed Standard Method for the Testing of Pulp for Strength (Unbeaten)—E. P. Cameron. Pulp and Paper Mag. of Canada 23, no. 10:250-251 (March 5, 1925); T. S. 81:190; C. A. 19:1775; Int. No., 1925, of Pulp and Paper Mag. of Canada.

*Sampling*—The sampling is to be such that an accurate average sample is obtained.

*Disintegration*—Pulps other than slush to be soaked in hot water, torn and rubbed in the hand until semi-disintegrated. This is to be followed by disintegration in the standard disintegrator for 5 minutes, the consistency being carefully regulated by consistency tests made on a Buchner funnel.

*Sheet Making*—The test sheets are to be made on a Wilen sheet mold using 150 mesh wire and 8 inch elbow suction pipe, no external suction being applied. Sheets made at a consistency of 0.1 per cent.

*Basis Weight*—Basis weight to be 60 pounds 24 x 36—500; 69.5 pounds 25 x 40—500.

*Couching Sheets*—Test sheets to be couched off wire on a 12 x 14 inch blotter and couched with another blotter. Couching being done by means of a couch block.

*Pressing*—Sheets to be pressed for 2 minutes at 500 pounds pressure.

*Drying*—Sheets are to be oven dried at 100 degrees C. for one hour.

*Testing and Weighing*—Testing to be done immediately after sheets are removed from oven; sheets are then trimmed, placed in the oven for 10 minutes and weighed. Four bursts per sheet and four sheets per test to be used.

*Reporting Results*—

$$\frac{\text{Average Mullen}}{\text{Ream Weight}} \times 100 = \%\ \text{points per lb.}$$

No. 30. Determination of the Relative Strength of Pulp by the Lampen Mill—By Hellmuth Schwalbe. Vereins Zellstoff u. Papierchemiker, Hauptversammlung 1924:132-150; Zellstoff u. Papier 5, no. 4:126 (April, 1925); Papierfabr 23, no. 14:234-241 (April 5, 1925); T. S. 81:245; C. A. 19:2130.

The various methods of determining strength tests of pulps are critically reviewed. The Lampen mill contains one large metal ball and presses and rolls the fibers; it does not cut them. Comparative tests on 50 gram samples are made with the procedure of Bergmann. The drying of paper for testing purposes is preferably done in a weak vacuum at 75 degrees, according to Bergmann. The Lampen mill gives exact and characteristic values even for pulps similar in properties, and gives good results in practice.

No. 31. Cellulose Testing in the Large Lampen Ball Mill—By R. Sieber. Papierfabr. 23, no. 15:245 (April 12, 1925); Vereins Zellstoff u. Papierchem.-Ing. 1924:175-176; T. S. 81:245; C. A. 19:2130.

A longer time of beating is required with the steel or bronze Lampen ball mill, compared with the porcelain jar mill, to produce a similar paper stock. In the latter, abrasion leads to the formation of fine particles which act as a filler, and instead of one, several balls are used. The Lampen mill gives good results and represents an advance over the porcelain one.

No. 32. Standard Methods for Testing Wood Pulp for Strength—Gösta Hall. Paper Trade J. 81, no. 4:45-49 (July 23, 1925); C. A. 19:3160; T. S. 82:263.

Attention is drawn to Finnish efforts to standardize a strength test for wood pulp, and description is given of a Finnish steel ball mill (Lampen) constructed for this purpose. Comparative tests between American and Finnish beating methods are reported, showing that the pebble mill beating is inapplicable for long time beating tests on account of mineral matters imparted to the stock from the pebbles. Following a discussion of the need and purpose of strength tests for wood pulp, two different standard methods are suggested, a "mill test" using the Lampen mill and an "official test" with probably a beater with adjustable bedplate, the former intended for control tests and the latter intended for clas-

sification of various pulps sold on the international export market. The working of these two tests is described and a method of air drying hand sheets is also given.

No. 33. New Method for Determining the Strength of Chemical Pulps—By P. M. Hoffman Jacobson. Papier 28:877-880 (Aug., 1925); Paper Trade J. 81, no. 22:52-53 (Nov. 26, 1925); C. A. 20:286; Wochbl. Papierfabr 56, no. 48:1454-1456 (Nov. 28, 1925); Papierfabr. 23, no. 45:717-718 (Nov. 8, 1925); T. S. 82: 263; 83:52.

Jacobson shows that the tensile strength of paper can be found from that of the pulp from r = R. y. a., in which r is the breaking length of the paper, R. is the zero breaking length of the unbeaten pulp, y. is the increase in R. obtained by beating for the given grade of paper (to be determined experimentally under mill conditions), and a. is the adhesion (ratio of ordinary to zero breaking length approximately constant for a given grade under given mill conditions). (Cf. C. A. 19, 2129.)

No. 34. Testing Strength of Pulps—By Carl Rieth. Papierfabr. 23, no. 33:525-529 (Aug. 16, 1925); C. A. 20:288; T. S. 82: 263.

Strength tests on pulps showed that the maximum tearing strength was obtained when the stock was parchmentized. The experiments are described in detail. The chlorine figure of the pulp decreases with an increase in strength.

No. 35. The Strength Determination of Pulp—F. Rühlemann. Papierfabr. 24, no. 1:1-6 (Jan. 3, 1926); Zellstoff u. Papier 6, no. 1:24-26 (Jan., 1926); Paper Trade J. 82, no. 13:57-60 (April 1, 1926); T. S. 83:52; C. A. 20:3565.

The use of an elaborate apparatus, with or without a motion-picture camera, for ascertaining the tensile strength of individual fibers is described. By this apparatus it is shown that the strength properties of a Mitscherlich sulphite pulp, bleached in the usual manner at 35 degrees, at first increases and then decreases as the bleaching progresses.

No. 36. Standards—Influence of Moisture on Mullen Strength—By E. P. Cameron. Pulp and Paper Magazine, International Number, February, 1926, pages 132-133.

Up to the present time the proposed standard method for strength testing of pulp calls for the bursting of test sheets while they are in the oven dried condition. This method functions satisfactorily when using the Mullen tester; but when further tests such as tensile strength, folding endurance and such are considered, the question of the time interval of exposure to atmospheric conditions becomes important.

An investigation, primarily designed to ascertain the rate of absorption of atmospheric moisture by different types of pulp when exposed to atmospheres of different relative humidities, was carried out, the underlying points to be qualified being:

1. The maximum moisture allowable in oven dried test sheets before the accuracy of the test was materially affected.
2. The time interval allowable for absorption at this point for various types of pulp when exposed to various relative humidities.

Sample test sheets of ground wood pulp, sulphite and kraft in both the beaten and unbeaten states were made according to a standard method. The sheets were oven dried and tested after the following intervals of exposure to the air: immediately, 5 minutes, 15 minutes, 25 minutes, 45 minutes and 24 hours—relative humidity 60 per cent. From a study of the results of this work, it would seem that the strength increased very rapidly during the first five minutes, reaching a maximum after about 15 minutes. From this point on, the strength falls off gradually with increased standing up to 45 minutes where it appears to reach an equilibrium as evidenced by the strength figures after 24 hours' standing.

An attempt was made to determine the rate of absorption of moisture by bone dry sheets of ground wood pulp, beaten and unbeaten kraft and bleached sulphite, by placing the test sheets in a desicator containing a sulphuric acid solution corresponding to a definite relative humidity. From a consideration of the results, it was observed that the moisture absorbed by oven dried sheets was very much greater when placed in the open air than when placed in a desicator at the same relative humidity for periods up to 45 minutes.

It also seems probable that the time interval necessary for "folding" and perhaps for "tensile strength" will introduce sufficient error to affect the results when tested in the bone dry condition.

No. 37. Interpretation of Results in Testing Sulphite Wood Pulp—R. N. Miller. Paper Trade J. 82, no. 16:48-51 (April 22, 1926); Tech. Assoc. Papers 9:134-137 (1926); C. A. 20:2069; T. S. 83:121.

A comparison and discussion of results obtained by the old and new methods on commercial sulphite pulps widely variant in properties and representing the results of a wide variety of cooking conditions, and on a large number of sulphites made experimentally at the Forest Products Laboratories show that the two methods give distinct types of results, which suggest different applications. The old method is eminently suited to the investigation of the type to which a pulp belongs and to the correlation of cooking conditions with pulp properties. The new method is suited to the rapid mill control necessary to keep production of a certain type of pulp up to standard.

No. 38. Method for Determining the Strength of Sulphite Wood Pulps—R. N. Miller. Paper Trade J. 82, no. 16:44-47 (April 22, 1926); Tech. Assoc. Papers 9, 130-133; T. S. 83:121; C. A. 20:2069.

One hundred grams of air dry pulp and three liters of water are mixed and placed in a two jar Abbe ball mill together with 10 pounds of pebbles of such size that 75-77 pebbles constitute that weight. The mill is revolved at 60 r.p.m. and a sample of pulp is taken every 1,200 r.p.m. This sample makes a sheet weighing 2 grams when trimmed 5 x 7 inches.

The sheet mold has the wire and plate removable so that couching is done by removing this and turning it over on a felt and pressing down instead of rolling with a couching roll or wooden rocker. Pressing is done between felts in the hydraulic press at 100 pounds for one minute. The sheets are partially dried on a steam hot plate and then placed in a drying oven on racks until bone dry. Five breaks are made on each sheet, averaged, and the strength recorded in points per pound on a 24 x 36—500 ream.

*Size of Test Sheets* .....5 x 7 inches
*Basis Weight* (25 x 40—500) .....Approx. 63 pounds

No. 39. Evaluating Pulp—By F. D. Libby. Paper Trade J. 82, no. 22, p. 49 (June 3, 1926).

Points of maximum strength are indicated. Contains a record of a small beater installation and includes the following statements:

"While completing this work we installed a small beater with controllable bedplate as additional equipment to use as a routine test. We then substituted it for the ball mill for preparing the pulp. In the beater we make one run and take out samples for the sheets every twenty minutes, leaving the rest of the procedure the same to obtain a comparison between the two methods. The beating curves are practically the same but develop more slowly and have a lower maximum point than with the ball mill. This method speeds up the work so that it is much more practical for a laboratory that has several pulps to test a day."

No. 40. Recent Results on the Strength Determinations of Paper Pulps—Hellmuth Schwalbe. Papierfabr. 24, no. 31:465-468; no. 32:481-483 (Aug. 1, 8, 1926); Wochbl. Papierfabr. 57, no. 42:1151-1156; no. 43:1181-1184 (Oct. 16, 23, 1926); C. A. 20: 3813; T. S. 84:279.

The testing of half-stuffs is carried out by the preparation of

sheets of paper under the most carefully standardized conditions. For routine tests in the pulp mill the fiber may be conveniently prepared in the Lampen ball mill, but for the complete investigation of a new type of pulp the ball mill must be supplemented by beating trials in a properly designed hollander capable of treating stuff at the normal 5 per cent concentration. The hollander tests must be controlled by determinations of the degree of beating by sedimentation or Schopper's apparatus. The formation of the sheets is the most difficult operation and accurate conditions must be established. Sheets should be made at a substance of 100 g./m.$^2$ The pressure used for compacting the sheets has a great influence on thepaper's strength; a press adjusted at 35 kg./cm$^2$ (500 lbs./sq. in) is used. Conditions of drying the sheets, preferably on a heated metal surface, must be standardized; careful adjustment of atmospheric humidity is necessary when performing the tensile strengths.

*Basis Weight* (25 x 40—500) .....Approx. 71 pounds

No. 41. Proposed Standard Test Conditions for Determining the Initial Strength of Pulp—G. P. Genberg. Paper Trade J. 84, no. 4:47 (Jan. 27, 1927); Tech. Assoc. Papers 10, no. 1:117 (1927); C. A. 21:1350; T. S. 85:101.

*Disintegration*—The pulp sample to be tested shall be in a perfect state of disintegration, this having been accomplished in such a manner that no hydration or cutting of the fibers has taken place.

*Preparation of Disintegrated Sample*—The pulp shall be diluted to 0.5 per cent consistency. The exact consistency must be determined in each case, so that the exact amount of fibers can be measured out for the test sheets.

*Area of Test Sheets*—The area of the test sheets shall not be less than 36 square inches nor more than 81 square inches.

*Weight of Test Sheets*—The test sheet shall have a weight equivalent to 125 pounds per ream 25 x 40—500 and must not vary more than 3 pounds + or — on this basis.

*Sheet Making*—The test sheets shall be made on a sheet machine. The screen shall be covered to a depth of about 4 inches with clear water. The volume of diluted stock corresponding to the quantity of fibers required to make a sheet of the weight given is poured in and the deckle box is filled with clear water to such a height that it will require 12-14 seconds from the time the discharge valve is opened until the water has left the sheet completely.

The sheet shall be made as follows: The suspension of fibers is mixed with the hand and no time is allowed for settling, the discharge valve, which must be a quick opening gate valve, being opened immediately on withdrawing the hand. The sheet shall be couched off on a damp felt and placed on another felt. Each sheet shall be placed evenly on the felt covering the previously made sheet and a galvanized iron plate shall be placed on top and bottom of the stack.

A sufficient number of test sheets shall be made, so that a sufficient number of determinations can be made to insure an accurate average of each strength property desired.

*Pressing*—The sheets shall be pressed between felts for 30 seconds at 40 pounds per square inch pressure. The sheets shall then be removed and pressed between dry and cool blotters, eight blotters per sheet on each side. The pressure is raised to 200 pounds per square inch for 5 minutes. The test sheets are then transferred to dry blotters, four on each side and pressed at two hundred pounds pressure for two minutes.

*Drying*—The pressed sheets shall be air dried at 65 per cent humidity at 70 degrees F.

*Weighing of Test Sheets*—The sheets shall be weighed on a scale having a sensitiveness of 10 mg. per 50 grams. The weight shall be expressed in grams and hundredths of grams and then recalculated in pounds per ream.

*Testing of Sheets*—The sheets shall be tested for strength properties at 65 per cent humidity at 70 degrees F. on apparatuses recognized as standard.

*Computation of Results*—All tests shall be reported in per cent points per pound basis weight.

No. 42. Proposed Standard Test Conditions for Determining the Initial Strength of Pulp. Report of Committee on Chemical and Physical Standards—Pulp and Paper Magazine of Canada, International Number, February, 1927. (p. 150).

This report gives verbatim the proposed specifications for the initial strength test mentioned in reference No. 41 above and in addition touches briefly on the use of a Dazy churn for disintegration and on experiments under way using the ball or pebble mill for hydrating pulp.

No. 43. Strength Testing of Pulp—Howard W. Laymon. Paper Trade J. 84, no. 8:175, 177, 179 (Feb. 24, 1927); Paper Mill 50, no. 9:122, 124, 126, 128 (Feb. 26, 1927); Pulp and Paper Mag. of Canada 25, no. 18:573-575, 577 (May 5, 1927); Tech. Assoc. Papers 10, no. 1:37-39 (1927); C. A. 21:1351.

This work further approves and substantiates by numerous experimental data the method suggested by the Sulphite Committee (G. P. Genberg, Chairman, Paper Trade J. 84, no. 4:47 (Jan. 27, 1927)). Inasmuch as the latter article is summarized elsewhere in this review further discussion will be unnecessary as the procedures are essentially the same.

No. 44. Strength Testing of Chemical Pulp, Relation Between the Initial Strength of Bleached Sulphite and the Strength Properties Developed in Beating It—G. P. Genberg. Pulp and Paper Mag. of Canada 25, no. 17:537, 540 (April 28, 1927); Paper Mill 50, no. 9:92, 94, 98, 100, 102 (Feb. 26, 1927); Paper Trade J. 84, no. 8:169, 171, 173, 175 (Feb. 24, 1927); Tech. Assoc. Papers 10, no. 1:34-37 (1927); Paper Makers' Mo. J. 65, no. 9:359-360 (Sept. 15, 1927); Papierfabr. 25, no. 47:733-734 (Nov. 20, 1927); C. A. 21:1350; T. S. 85:101.

The standard procedure of the TAPPI with some slight modifications as well as Miller's methods were used in the investigation. As a general conclusion from the tests, it may be said that:

1. A low initial Mullen and low tear indicate an easy hydrating pulp of low strength.

2. A low initial Mullen and high tear indicate a free pulp requiring long beating to reach maximum Mullen value. Such a pulp will maintain a high tear during beating.

3. A high initial Mullen and low tear will indicate a pulp already hydrated to some extent. Such a pulp will reach a fair maximum Mullen in a short beating time. The freeness and tear will run low during beating.

4. A high initial Mullen and high tear will result in a high strength after beating coupled with easy hydrating properties.

No. 45. Lampenmühle, Hollandersmahlung und Nullreisslänge (Lampen Mill, Hollander Beater and Strength Properties)—B. Possaner von Ehrenthal. Papierfabrikant 25, no. 24A, Fest un Auslandsheft 104-12 (June, 1927).

The strength properties of various halfstuffs—unbleached sulphite, unbleached soda, unbleached linen and unbleached cotton—were developed by treatment in the Lampen mill and Hollander beater. Hydration was accomplished much more quickly in the former. Tensile tests (Schopper) were made on the handsheets and the strength properties deduced. The article contains a number of tables and curves. The size and basis weight of the handsheets are not given.

No. 46. Standard Methods of Preparing Test Sheets. Paper Trade J. 86, no. 8:199, 201, 203, 205, 207, 209, 211, 213, 215, 217 (Feb. 23, 1928); Pulp and Paper Mag. of Canada 26, no. 13:429-432; no. 14:449-456 (Mar. 29, April 5, 1928); Tech. Assoc. Papers 11, no. 1:47-56 (1928).

The method described by the Canadian Technical Section is essentially the same as that proposed by the Sulphite Committee

under G. P. Genberg, a synopsis of which appears in this review.

The Canadian Technical Section report goes into great detail in describing the disintegration apparatus, sheet machine (modified Wilen), press, and screening apparatus.

No. 47. Testing of Wood Pulps for Strength—By J. L. A. MacDonald and G. A. Cramond. Paper Makers' Mo. J. 66, no. 5: 214-217 (May 15, 1928); World's Paper Trade Rev. 89, no. 20:1620, 1622, 1624, 1626, 1628, 1630 (May 18, 1928); Paper Maker 75, no. 6:617-618, 620-621 (June, 1928); Paper Trade Jour. 87, no. 5:51-53 (Aug. 2, 1928); Paper Mill 51, no. 28:20, 22, 24, 36 (July 14, 1928); Pulp & Paper Mag. Can. 27, 573-4, 605-8, 638-39 (Apr. 18 & 25, 1929).

The following conditions should be met by any proposed method.

*General*

A. The method should be applicable to all classes of chemical wood pulps.

B. The method should be such that it can be applied to measurement of the initial strength of all classes of chemical wood pulps, and be capable of extension to measurement of "beating quality" in terms of strength characteristics.

C. The method should be applicable to pulps in both moist and drylap conditions, i.e., as commonly received by the British paper maker.

D. The method must be such that the personal equation is reduced to a minimum so that truly comparable results can be obtained by different workers.

E. The method should be such that the apparatus required can be manipulated correctly by anyone of average intelligence and ability.

F. The method should be such that well-known and accepted strength testing instruments can be applied.

*Special*

Any proposed method involving the preparation of test sheets from chemical wood pulps should satisfy the following requirements:

G. Each sheet must be uniform in substance, bulk, look-through and finish.

H. The method must allow of a number of identical test sheets being made in any one test or experiment.

Test values obtained on individual sheets must be in reasonable agreement.

K. The average values of tests obtained on individual sheets must be in reasonable agreement as between sheet and sheet.

*Sheet Testing*

Our practice is to test four sheets for bursting strength (Mullen) seven bursts per sheet, one sheet for tear (4 tests) and one for tensile strength (8 tests) using the Elmendorf and large Schopper respectively.

It is of first importance to prove that using the same apparatus and conditions results can be repeated for any pulp.

*Summary and Conclusions*

Rough and ready methods of testing for strength quality are worthless.

No. 48. Bronze Rod Mill for the Strength Testing of Wood Pulp.—W. F. Moore. Paper Trade J. 87 No. 21; 59, 60 (Nov. 22, 1928).

A bronze jar using steel rods is used in place of a porcelain jar in an attempt to overcome some of the disadvantages of the latter. Samples are taken periodically at every 1200 Rev. of the mill to maximum strength. Sheets are pressed between eight blotters for 5 minutes at 20 lbs. pressure and repressed between 4 blotters for 2 minutes at 200 lbs. They are then air dried and trimmed 7 x 7". Results are reported in per cent pts./lb. on a 25 x 40—500 ream weighing 100 lbs.

*Size of Test Sheets* ..... 7 x 7 inches

*Basis Weight* (25 x 40—500) ..... 100 pounds

No. 49. Strength Testing of Chemical Pulp.—William S. Woodson, Jr., and G. Hall. Paper Trade J. 88 no. 4:51-55 (Jan. 24, 1929).

Comparative tests were made between the Abbe pebble mill and a new bronze metal ball mill in an effort to overcome some of the outstanding disadvantages of the former. Ash tests in the metal ball mill were negligible and throughout the experimentation the strength tests appeared to be higher in the new mill. Several photomicrographs and tables of data show clearly the type of beating action secured in both instances. The authors recommend beating in metal ball mills, the elimination of hand couching, pressing at high pressures, and drying sheets under constant tension at moderate temperatures as steps to be considered seriously in adopting standard procedures.

*Basis Weight* (25 x 40—500) ..... Approx. 70 pounds

No. 50. A Semi-automatic Sheet Machine for Pulp Strength Testing—Hellm. Schwalbe Paper Trade J. 88, no. 5:63-65 (Jan. 31, 1929).

A new type of sheet machine is described. This consists of a regulation sheet mold the top of which is equipped with a specially designed motor driven stirrer. Advantages claimed are simplicity of operation with elimination of the "personal equation" and uniformity of test sheets. Several tables of data show reproducibility of results obtained with various types of pulp.

No. 51. Control and Evaluation of Sulphite Pulp Quality—G. P. Genberg and E. O. Houghton, Paper Trade J. 88, no. 17:71-78 (April 25, 1929); no. 18:53-59 (May 2, 1929).

The procedure used is practically identical with that described by Genberg in the proposed standard method described in the Paper Trade J., Feb. 23, 1928. An attempt was made to bring out the relation between the Chlorine number and the strength of unbleached pulp. In general a high chlorine number gives a pulp with a high mullen, low freeness, and low tear tests. As the chlorine number decreases the mullen should decrease and the tear and freeness increases to a certain point after which they both decrease. The effect of various factors in bleaching was also thoroughly studied in relation to the strength properties of the pulps produced.

No. 52. Beitrage zur Festigkeithestimmung von Zellstoffen. (Contribution to the Strength Testing of Pulp). A. Küng and E. Seger. Papierfabrikant 27, No. 24-A Fest and Auslandsheft 96-102 (June, 1929).

Two pulps, an unbleached Mitscherlich sulfite and a week bleached pulp were investigated using two methods (a) the scientific method of the Vereins der Zellstoff und Papierchemiker und—Ingenieure and (b) the working or plant method of the Cellulosefabrik Attisholz (Switzerland).

In method (a) the equivalent of 40 grams of oven-dry was disdisintegrated in a Schopper disintegrator having a speed of 400 R. P. M. Two hours was sufficient to break up the hardest pulp. The stock was then washed out quantitatively with water. Before beating the stock was concentrated, broken up and made up to a volume of 1 liter with water, the oven-dry consistency of the stock being therefore 4 per cent. The mill was run at speeds of 300 and 450 R. P. M. for various periods of time up to 6½ hours. Sheets were made on a Schopper machine using a 75 cm. water column. The sheets were couched off on felts which were placed between brass plates and pressed at 20,000 Kg. (64 atmospheres) pressure. The sheets were then dried on an electric drier.

In method (b) the same procedure was followed with the exception that the equivalent of 8 gms. of oven-dry pulp was removed at 20 minute intervals, freeness tests made, and two handsheets made up.

The sheets were tested for tensile and tearing strengths. In the former and length of the strip used was 10 mm. and 50 mm. All testing was done at 65 per cent relative humidity.

The results were given in eleven tables illustrated by four graphs.

The sheet size was 300 sq. cm., (46.5 sq. in.) each sheet weighing about 4 grams. (Basis weight 25 x 40-500 about 95 lbs.)

No. 53. Proposed Standard Method of Pulp Evaluation

Initial Strength Test.—By H. Ainsworth Harrison, World's Paper Trade Rev. 91, 1016, 1022-26, (Mar. 22, 1929); Discussion in Vol. 91, 1194-1206, 1282-96 (Apr. 5 & 12, 1929); Paper Trade J. 89, no. 10, pp. 61-63 (Sept. 5, 1929).

After a general introduction stressing the need and importance of pulp testing, the report points out the necessity of obtaining an accurate average sample from at least three bales representing one mill cook wherever possible. The minimum weight of the composite sample being 100 g. B. D. Samples submitted by supplier should be delivered in condition in which main bulk is to arrive.

*Preparation of Sample*—The sample equivalent to 24 g., B. D. is cut into 1" squares and allowed to soak 4 hours if chemical pulp and 24 hours if ground wood, before disintegrating. Moist pulps may be disintegrated immediately.

*Disintegration*—The 24 gram sample is made up to 2000 cc. (1.2 per cent consistency) and disintegrated for 75000 rev. at rate of 3000 R. P. M.

*Dilution.*—After all preparation is finished stock is diluted to 8 liters for groundwood and 16 Liters for sulphite giving consistencies of 0.3 per cent and 0.15 per cent respectively.

*Sheet Making.* 800 cc. at 0.15 per cent consistency is used for sulfite and 440 cc. at 0.3 per cent consistency for groundwood. This gives sheets weighing 1.2 and 1.32 g. respectively. The larger amount is used for groundwood to allow a 10 per cent fiber loss through the wire. Water is next added to the sheet machine to a depth of 35 cm. above the wire. A perforated metal disc stirrer is inserted and moved 6 times up and down and withdrawn. After 10 sec. the valve is opened and the sheet allowed to drain for thirty sec. under suction, before couching. The sheet measures 200 sq. cm. in area and has a basis weight of 42.7 lbs., 25 x 40—500.

*Couching.* Two pieces of 8x8" blotting paper 0.0195"—0.0200" thick, weighing 35/36# Demy 500 are laid centrally on the pulp sheet in the machine. The flat brass couch plate is at once laid centrally on the blotters and the brass couch roll placed gently in the middle of the plate. The roll is moved backward (no other pressure being applied) to within ¼" of the front edge, then back and forth four times and finally to the middle, when it is lifted off. The time taken to perform the five complete rolls should be about 20 seconds.

The pulp sheet and blotters are removed and placed on one dry blotter in the press. A mirror of polished stainless steel plate is placed on the test sheet followed by another blotter ready to receive the second test sheet and couch blotter, this process is repeated until there is a pile of seven sheets.

*Pressing.* The first pressing is for five minutes at fifty pounds per square inch. The second pressing is for two minutes at fifty pounds per square inch, the stack being made up of blotter, plate, sheet and press filler repeated seven times.

*Drying.* The sheets are placed in a set of drying rings with a 20 KG. weight placed on top, drying taking place in a warm room. After this the sheets are conditioned for twelve hours at 65 per cent humidity and 70 degrees F., before testing.

No. 54. Identification and Evaluation of Unbleached Chemical Wood Pulps—By Gosta A. Hall—World's Paper Tr. Rev. *91* No. 16, 1340, 1342, 1344, 1346, 1348, 1352, 1354, 1396 (April 19, 1929); *91* No. 17, 1442, 1444, 1486, 1488, 1490, 1492 (April 20, 1929); *91* No. 18, 1530, 1532, 1534, 1536, 1586, 1588 (May 3, 1929); *91* No. 19, 1630, 1632, 1634, 1636, 1638, 1676, 1678, 1680, 1682, 1684, 1686, 1688 (May 10, 1929); Discussion *91* No. 20, 1738, 1740, 1742, 1746, 1748, 1750 (May 17, 1929); Discussion *91* No. 21, 1818, 1820, 1822, 1824, 1826, 1830, 1832, 1834 (May 24, 1929); Discussion *91* No. 22, 1906, 1908, 1910, 1914, 1916 (May 31, 1929).

The question of paper specifications and their meaning is discussed and explained. The fact that the strength of pulp increases with hydration while the porosity decreases is discussed. The "unbeaten" test proposed to TAPPI is stated to be unreliable although applicable in certain cases. Beating in small experimental beaters had not been satisfactory to date. Fibers beaten in the Abbe pebble mill appear definitely bent. The Lampen ball mill is discussed.

The Swedish method of making handsheets is described together with a detailed description and illustration of the sheet machine. Test sheets are dried on ferro types at 50°-60° C. The effect of pressing the handsheets was studied, and a pressure of 200 pounds per square inch recommended. The beating action of a mill Hollander beater apparently lies between the Lampen ball mill and Abbé pebble mill in its effect.

Factors influencing chemical pulp quality are (1) character of wood (2) cooking degree, and (3) treatment given wood in pulping process. The analyses of various woods and pulps are given. The relation between bleach consumption and lignin content are discussed, the bleach consumption increasing with increased lignin content.

Sulphite pulps usually hydrate more readily than sulphate pulps. The strength as indicated by Mullen, folding and tensile tests usually increases with the lignin content. Porosity is a better indicator of hydration than freeness. The question of self sizing through beating is discussed.

A full discussion of the paper is given.

*Sheet size used for pulp tests*: 10 inches in diameter.

*Weight of test sheets* 68 grams per square meter, 48 lbs., 25 x 40—500 (for beaten tests); 120 grams per square meter, 85 lbs., 25 x 40—500 (for unbeaten tests).

No. 55. Determination of the Strength Properities of Halfstuffs.—By G. Dalen, Mitt. kgl. Material, 1911, no. 2:12-22; Wochbl. Papierfabr. *43.* no. 22:1894-1895; no. 24:2220-2223; no. 25: 2304-2307; no. 26:2408-2409 (June 1-29, 1912); Paper 8, no. 5:22 (July 17, 1912); Paper Makers' Mo. J. 50, no. 8:291 (Aug., 1912); C. A. 6:2525. Paper Mill 35, no. 28:15 (July 13, 1912); World's Paper Trade Rev. *57,* no. 26:1297-1298 (June 21, 1912); J. Soc. Chem. Ind. 31:582.

D. concludes that by careful manipulation results may be obtained by testing sheets of pulp made up on hand molds in the lab. which will be entirely comparable to results to be expected from the same pulp in practice.

No. 56. Strength Testing of Sulphite Pulp Discussion.—Tech. Assoc. Papers 8:191-196 (June, 1925).

An interesting and instructive discussion is given of the three most common methods of testing sulphite pulp for strength. The first one is known as the pressure method, the unbeaten strength or the felting strength of pulp. The second one involves the hydration of pulp by the ball or pebble mill. The third measures the beating value of pulp or its strength development with normal beating operation.

No. 57. Modern Method for Determining the Strength of Cellulose.—By Gosta Hall, Svensk Papers-Tidning 28, no. 17: 448-451; no. 18:474-478; no. 19:503-504 (Sept. 15, 30, Oct. 15, 1926); Zellstoff u. Papier *7,* no. 4:142-145; no. 5:190-192 (Apr., May, 1927); T. S. 85:240.

The need of a standard method for determining the strength of pulps is emphasized. The ball mill method developed by the Forest Products Laboratory is recommended as a control method in the production of pulp, while a reliable method using a miniature hollander ought to be developed to indicate the beating necessary to produce strength in the finished paper.

No. 58. Pulp and Paper Manufacture in North America IX. The Testing and Control of Chemical Pulp.—J. d'A. Clark, World's Paper Trade Rev. *86*, No. 21:1636, 1638, 1640, 1642 (November 19, 1926); Pulp and Paper Mag. of Canada *25* No. 3:83-86 (January 20, 1927).

Trouble is experienced with laboratory beaters because of the difficulty in maintaining the setting of the roll and the sharpness of the bars. For this reason the pebble mill is often used. Care must be taken to secure the correct weight, number and volume of pebbles and to charge the same amount of pulp each time. The method proposed consists of kneading 100 grams of oven-dry pulp in water, making up to 2 liters and charging in an Abbe pebble mill 13⅝ in. x 11⅛ in. with 10 lbs. of pebbles having a volume of 1780 c.c. The mill is revolved between 50-75 R.P.M. for 2000, 2500, 3000 and 3500 revolutions for bleached sulfite, 3500, 4000, 4500 and 5000 revolutions for unbleached sulfite and 45000, 50000, 55000 and 60000 for kraft. At the end of the first period the cover is removed and exactly 110 c.c. taken out, which is then diluted to 400 c.c. and stirred on an electric stirrer for 2 minutes. 100 c.c. of stock is taken, diluted to 20 oz. and poured into a 5¼ in. circular sheet machine. Four sheets are made for each period and pressed at 500 lbs. per square inch. 16 to 20 bursts are made on the sheets from each period. In almost every instance the curve reaches a maximum then falls off slightly and then rises again to an ultimate maximum.

A consistency machine for obtaining a uniform dry weight of wet pulp is described.

Bleaching and consistency control is described.

The test sheet weight is 60 lbs. (24x36-500) or about 70 lbs. (25x40-500)

The circular sheets are 5¼ inches in diameter, having an area of about 25¾ sq. inches.

No. 59. Strength Testing.—By Hellmuth Schwalbe, Papierfabr. *25*, no. 5:83-84; no. 35:545-547 (Feb. 6, Aug. 28, 1927); T. S. 86:55

The method of pulp testing in the "Centrallaboratorium," at Helsingfors, Finland, is described. Instead of the usual 50 g. Lampen mill, the recommendation is made that a smaller mill of 20 g. capacity would be a distinct advantage to use.

No. 60. Strength Testing of Wood Pulp.—G. P. Genberg, Paper Trade J. *85* No. 11:51-58 (Sept. 15, 1927); Pulp & Paper Mag. of Canada *25* No. 49:1583-88, 1605-1608 (Dec. 8, 1927); C. A. *21*:4063; T. S. *86*:192; Tech Chem. Papier u. Zellstoff-Fabrikation *25*, No. 2:23-29 (Feb. 25, 1928).

The article contains criticisms of the "unbeaten test" proposed to TAPPI in the spring of 1927. In discussing, Genberg states that (1) the limits of error are ± 1.5 per cent for the Mullen test and ± 2.5 per cent for the tearing test, (2) the Mullen decreases and the tearing increases with the increased dryness of the pulp at the start of the test, (3) that the rate of drainage and the amount of water present in the stock during the sheet making operation affect the strength of the final sheet (4) that the time of pressing, the use of single and double pressing, the use of varying numbers of blotters between the sheets and the use of hot and cold blotters all affect the strength, (5) and that the strength is also greatly affected by the method of drying. These points are illustrated by twenty-three tables.

All tests were made at 65 per cent relative humidity and 70 degrees F.

The basis weight used was 125 lbs. (25 x 40—500). The sheet size is not specified.

No. 61. Proposed standard method for strength of unbeaten pulp—By Halse, O. M., Morch, Kr., Borresen, A. and Samuelson, S., Papir Journalen No. *21*, p. 266 (1927); C. A. *22*, No. 14, p. 2662, (July 20, 1928).

A criticism of the TAPPI method, proposed by the Association of American Wood Pulp Importers as an international standard method. The Norwegian committee recommends that acceptance of the method as an international standard be deferred until Scandinavian mills have thoroughly proved its usefulness and reliability. More definite information is required as to (1) whether the method is for control or specifications or both, (2) whether wet or dry pulp is to be used and if the latter, what time of wetting is to be allowed before testing, (3) what types of pulp does the method apply to, (4) more specific details of procedure in sheet formation, and (5) duplicability of results on the same pulp in various mills and countries.

No. 62. Influence of Pressing on the Strength (of Paper Sheets)—Anon, Papier Fabr. *26*, 754-7 (1928); C. A. *23*, 3096, (1929).

An unbleached Mitscherlich pulp was beaten to freeness of 25°, 50° and 75° Schopper, hand-dipped sheets were made, pressed between felts at pressures ranging from 0 to 130 atm. in steps of 10 atm. (method not stated), dried on an electrically heated cylinder and tested for breaking length. The strength increased about 15% between 0 and 60 atm. falling off again to about 10% below the original value at 130 atm. There is a marked break between 60 and 70 atm. pressure. The data are given in detail.

No. 63. Pulp Evaluation—By O. P. Gephart, (included in "Interstate Cost and Tech. Meeting"), Paper Ind. *11*, No. 3:460-462 (June, 1929); Paper Trade J. *89* No. 1:53-55 (July 4, 1929).

Discussion of pulp testing and its application to various types of paper. The effect of hydrating pulp is taken up—"artificial mullen is developed at the expense of tear." Tear being one factor that is not artificial and cannot be acquired by processing is fundamental and largely dependent on the strength of the cell wall. Occasionally tear is not at a maximum in the unbeaten test but reaches this maximum after a short period of beating, thus making the unbeaten test unreliable even if the beater value is calculated. The importance of the beater value as being more constant over the beating range than either mullen or tear is emphasized. The interpretation of test results in relation to beater furnish is clearly discussed and examples given. The article contains six curves illustrating the discussion.

The beater value is defined as: The points Mullen per hundred pounds basis weight is added to one half the tear in points per hundred pounds basis weight and the result divided by two, or:—

$$\text{Mullen (pts. per 100 lbs. basis wt. 25x40—500)} + \frac{\text{Elmendorf (pts. per 100 lbs. basis 25x40—500)}}{2}$$

$$\frac{}{2}$$

The basis weight of the test sheets was 125 lbs. (24x40—500). The sheet size is not specified.

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## Examinations for Paper Technologists

The United States Civil Service Commission announces open competitive examinations for an associate technologist, $3,200 a year, and an assistant technologist, $2,600 a year.

Applications for associate and assistant technologist must be on file with the Civil Service Commission at Washington, D. C., not later than October 9.

The examinations are to fill a vacancy in the position of assistant paper technologist, Government Printing Office, Washington, D. C.; vacancies in the Bureau of Standards, Department of Commerce, and vacancies in positions requiring similar qualifications.

The optional subjects are rubber technology, leather technology, paper technology, ceramics, chemical technology, and any special branch of technology not included in any of those mentioned.

The entrance salary is $3,200 a year for the associate grade, and $2,600 a year for the assistant grade. Higher-salaried positions are filled through promotion.

Competitors will not be required to report for examination at any place, but will be rated on their education, training, and experience, and writings.

Full information may be obtained from the United States Civil Service Commission, Washington, D. C., or from the Secretary of the United States Civil Service Board of Examiners at the post office or customs house in any city.

## New Record Established at Fort Edward

[FROM OUR REGULAR CORRESPONDENT]

FORT EDWARD, N. Y., September 9, 1929.—All production records at the plant of the International Paper Company were shattered during the past week when in twenty-four hours 173 tons of paper were turned out. It was learned that the average production for that length of time generally calls for 150 tons. Superintendent Gault was highly pleased with the performance which established a new high production mark for the plant.

## Sales of Clay in 1928

The quantity of clay sold by producers in the United States in 1928 amounted to 4,026,332 short tons, valued at $14,200,739, or $3.53 a ton, according to a statement made public by the United States Bureau of Mines, Department of Commerce. These figures show an increase of 5 per cent in quantity and 4 per cent in value compared with 1927. They represent only clay sold as clay or mined under royalty and do not include the much greater quantity of clay that was burned into clay products by the producers themselves from their own property. The leading five States in the order of the quantity of clay sold were Pennsylvania with 24.1 per cent of the total quantity, Missouri with 10.6 per cent, California with 8.4 per cent, Ohio with 7.5, and New Jersey with 6.6 per cent. The data were collected direct from producers in 43 States and in cooperation with the State Geological Surveys of Alabama, Florida, Georgia, Illinois, Iowa, Maryland, Michigan, Missouri, New Jersey, New York, North Carolina, Texas, Virginia, Washington, and Wisconsin.

The sales of kaolin, the clay that is used in making high-grade pottery and porcelain, as well as paper, oilcloth, and other products, and which is generally considered the highest grade of clay, amounted to 496,142 tons, valued at $4,088,003, an increase of 9 per cent in quantity and 7 per cent in value as compared with 1927. The clay of largest quantity and value is fire clay. The sales of fire clay in 1928 were 2,785,158 tons. This was 3 per cent more than those of 1927, and only 1 per cent less than those of 1926, the year of largest sales. The value of the fire clay sold in 1928 was $7,480,609, a decrease of 3 per cent as compared with 1927.

The imports of clay decreased in quantity but increased in value in 1928 as compared with 1927. The imports of clay amounted to 370,379 short tons, valued at $3,506,363, a decrease of 6 per cent in quantity but an increase of nearly 2 per cent in value. Kaolin or china clay, constituted 83 per cent of the total imports in 1928. Exports of clay in 1927 amounted to 121,049 tons, valued at $1,390,591, an increase of 22 per cent in quantity and 24 per cent in value as compared with 1926. Exports of fire clay amounted to 50 per cent of the total.

CLAY SOLD BY PRODUCERS IN THE UNITED STATES IN 1927 AND 1928

| Kind | 1927 | | 1928 | |
|---|---|---|---|---|
| | Short tons | Value | Short tons | Value |
| Kaolin | 454,245 | $3,809,834 | 496,142 | $4,088,003 |
| Ball clay | 119,763 | 913,976 | 120,878 | 984,075 |
| Slip clay | 6,137 | 32,264 | 5,699 | 30,796 |
| Fire clay | 2,699,761 | 7,719,725 | 2,785,158 | 7,480,609 |
| Stoneware clay | 98,355 | 203,648 | 95,626 | 207,275 |
| Miscellaneous clay | 470,915 | 1,017,712 | 522,829 | 1,409,981 |
| | 3,849,176 | $13,697,159 | 4,026,332 | $14,200,739 |

## Specifications Committee Meets

[FROM OUR REGULAR CORRESPONDENT]

WASHINGTON, D. C., September 11, 1929.—The Committee on Paper Specifications of the Joint Congressional Committee on Printing held its first meeting last week to take up revision of the specifications. These are for the use of the committee in purchasing paper for the Government Printing Office for the fiscal year beginning March 1, 1930. Bids are generally opened in the latter part of January and awards made the first week in February. The specifications committee makes its report to the Joint Committee on December 4. The specifications committee is composed of the following:

F. P. Veitch, Senior Chemist, Bureau of Chemistry and Soils, Department of Agriculture, chairman; B. W. Scribner, Chief, Paper Section, Bureau of Standards, Department of Commerce; Arthur H. Smith, Chief, Printing and Duplicating Subdivision, Veterans Bureau, Permanent Conference on Printing; Ernest E. Emerson, Purchasing Agent, Government Printing Office; William H. Kervin, Storekeeper and Traffic Manager, Government Printing Office; Edward O. Reed, Technical Director, Government Printing Office; Walter W. Scott, Inspector of Paper and Material, Joint Committee on Printing; Ansel Wood, Clerk to the Joint Committee on Printing, secretary.

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Edited by
THOS. J. BURKE, C. A., Sec.-Treas.

# Capital Facilities*

## Accounting Principles and Methods

By Frederic W. Kilduff[1]

During the past ten years most of us, no doubt, have witnessed the positions of prominence which certain subjects have taken in the field of accounting. Taxes, depreciation, obsolescence, invested capital, inventory control, and—at present, budgets. During these same ten years, within which period accounting as a science and a business has made its greatest advance, comparatively little consideration has been given with respect to the proper accounting and record control of capital facilities, fixed capital, plant and property, fixed assets, or by what other names you may care to designate those assets which are acquired, not for sale in the ordinary course of business, but instead those assets necessary to the continued operation of a concern. There are of course isolated cases where a great deal of careful and painstaking thought has been given to this subject and its effect upon correct accounting and control, but in the greater number of instances it is safe to say that property accounting is still in a crude status and as result a reflection on those responsible for such a condition.

Considering the amount of capital invested in plant property it is surprising that so little attention has been given to its correct accounting and record. One need only examine the balance sheets of a number of representative concerns to see just how important the item of fixed property is. With a few exceptions, mostly in the retail field, more capital is invested in fixed property than in any other class of asset. Although at the present time accounting for capital facilities is not idealistic by a long way, yet the situation is far from a hopeless one. Already certain movements are on foot which are bringing to the fore an appreciation of this subject. Through the interest which these same movements will undoubtedly create, proper thought on this subject is bound to come, and with it a desire to put the house in order. Your attention is particularly directed to what public utilities are now doing in connection with improving fixed capital accounting methods and records.

For example, the National Electric Light Association, composed of representatives from prominent Electric and Gas Companies, working through its Fixed Capital Records Committee, has done much toward arousing thought concerning the improvement of fixed property accounting. No doubt other associations and organizations in the near future will take similar interest in this subject. Let us sincerely hope so.

This paper which I have prepared for the occasion concerns itself with a brief presentation of the proper accounting for capital facilities. Although of necessity there is a skimming of the top here and there, nevertheless it is hoped that it may leave with you a few thoughts on this important subject.

### Essentials of Proper Accounting for Fixed Properties

Any comprehensive plan for the proper accounting of capital facilities should include the following:

1—A set of standards by which it is possible to determine what is and what is not a proper charge to capital facilities.

2—A standard procedure in connection with the acquirement, recordation, transference, and disposal of capital facilities.

3—Detailed instructions as to what expenditures are proper cost charges to capital facilities.

4—A standard classification of property accounts for general ledger and property ledger purposes.

5—A comprehensive and well designed form for recording complete information with respect to each separate unit of plant property and a well planned arrangement for filing these records.

6—An effective accounting control between the general ledger, property ledger, and property cards,—and a physical control of properties through the individual property cards or records.

### Selection Standards

In most instances it is no difficult matter to determine what is and what is not an item of fixed plant property. A building, a lathe, a forge, a truck—these are capital facilities, and it does not require any unusual amount of thought to classify correctly objects of this kind. However, there are a great many items which do require careful thought before they may be correctly classified as fixed property items, and therefore proper charges to the fixed property accounts. In order to avoid action on the part of someone in the organization to make arbitrary determinations, a standard should be established which will govern each situation. Practically, this is accomplished by the preparation of a detailed list of items of plant property, alphabetically arranged. With this list available it is a simple matter when any new property is acquired to make reference to it for the purpose of ascertaining its correct classification—that is whether it is a proper plant item or a charge to expense or some inventory account.

To secure such a list requires the bringing together of the names of a large number of objects, and through proper consideration of each, eliminating those whose lives will be so short

* N. A. C. A. Bulletin.
[1] Remington Rand Business Service, New York City.

that their cost should be extinguished without recourse to depreciation. For example, items such as jigs, fixtures and similar equipment may be so short lived that they should not be capitalized but instead charged off directly, or possibly through a tool inventory account. This may be the condition in one concern. In another, the same items will last for such a period of time that correctly they should be capitalized and eventually written off by means of depreciation.

In establishing this list of selection standards, the assistance of employees acquainted with the various kinds of plant property should be utilized. Going over each item with a technician should permit the accountant to separate the capitalizable items from the expendable items. If one doubts the necessity for such a standard, he would do well to make a detailed analysis of a few property accounts and expense accounts representing maintenance. The first mentioned accounts are for the purpose of satisfying himself how many expendable items creep into the property accounts, and second, how many property items are incorrectly charged off to expense.

### Standard Procedure in Connection with Acquirement, Recordation, Transference, and Disposal of Capital

While it appears rather unnecessary to give consideration to the matter of a standard procedure in connection with the handling of capital facilities, from acquisition to disposition yet there are a few concerns which have a standard procedure other than that in connection with the acquirement of a property item. I believe I am correct in saying that most concerns have some sort of a procedure which must be closely followed before any new buildings, machinery or equipment, are obtainable. Most of us are acquainted with the record for this purpose which requires from some one in authority, information concerning a description of the article, the necessity for its acquisition where it is to be used, its cost or approximate cost, and other essential data which the executive may use as a basis for his decision to obtain or not to obtain the item in question. However, once proper approval has been given for the purchase or manufacture of the property item it appears that a great many concerns believe that any standard procedure in connection with further control is unnecessary. The reason for this condition results no doubt from the nature of the property itself. Because they are called fixed properties the name implies a certain amount of physical and locational permanence, which in certain cases is not actually the case.

Supplementing the standard procedure adopted in connection with the acquirement of property, there should be a standard procedure with respect to the proper recordation both in detail and in summary, and also procedures which will bring to a standard form of operation any tranference of property between departments, plants, or other locations. Concerning the matter of a complete record, certain rules should be laid down as to exactly how documents originating through the purchase or manufacture of equipment should be handled, so that detailed information concerning each item can be established at one central point and the proper accounting control thereof established through the proper ledger accounts.

In connection with the disposal of capital facilities through sale or abandonment, a procedure should also be established so that those responsible for physical properties cannot be released of that responsibility until certain necessary steps have been accomplished. The same amount of care which is usually exercised in acquiring property should also be exercised in connection with its disposal. If a concern is interested in requiring information from its cashier as to the disposal of cash, it should be just as interested in the disposition of that which cash has purchased.

### Proper Items of Cost

Assuming that an item of property is properly chargeable to a fixed capital account, the next question that logically arises is that with respect to what should be included in its cost. For example, should transportation charges, handling charges, foundations and belting, be included as a part of the cost of a machine? Should the cost of land include the cost of abstracts, appraisals, surveys, examination of title, legal fees, etc.? Should buildings be charged with the cost of permits and licenses, cost of testing, cost of wrecking an old building, bonuses paid to secure the release of premises by tenants, interest on borrowed money, etc.? Should overhead on equipment manufactured in the plant be included as cost, and if so on what basis should such overhead be distributed? Unless detailed instructions are laid down in connection with all such matters, the question as to what constitutes cost will invariably be left to arbitrary judgment. Naturally from the accounting standpoint the results will be unsatisfactory. Concerns who have in operation a first class system of property accounting set forth what is to be taken in as cost in connection with each of its various classes of property. In this way standard practice is established and arbitrary accounting abolished. It is natural of course that from time to time certain conditions will arise which the standard procedures do not cover. In such cases a satisfactory decision can be arrived at and instructions arising from that decision added to the standard practice for the future.

### Standard Classification of Property Accounts

The necessity for any standard classification of accounts is well known and in the establishment of such, fixed assets should be given their proper consideration. For example, the following accounts might appear in the general ledger.

1—Land and land improvements
2—Building and building equipment
3—Power, plant and equipment
4—Machinery
5—Motors
6—Factory, furniture and equipment
7—Manufacturing equipment
8—Semi-durable tools and instruments
9—Internal transportation equipment
10—Office furniture and appliances
11—Transportation and delivery equipment
12—Sundry equipment

These accounts are naturally very broad in scope and really are controlling accounts for the more detailed accounts in a property ledger. Just the same as "accounts receivable controlling account" in the general ledger controls may individual accounts receivable in the receivable ledger, so one of the above mentioned property accounts should control the investment in fixed property of the same classification as the controlling account, the supporting details of which are to be found in the property ledger. The real problem in connection with property accounts is their classification for property ledger purposes. How detailed should these accounts be, and should their arrangement be one by description or function? These questions must be answered before any progress can be made to set up accounts in the property ledgers, in a way which will secure the maximum value. Let us take for example the general ledger account "building and building equipment". The detail accounts in the property ledger in support of each building would probably consist of the following:

1—*Buildings*:
1—Building Proper should include excavations, foundations, sewers, walls, floors, ceilings, roof, windows, skylights, stairways and all other structural work, carpenter work, permanently attached to the above.
3—*Plumbing and Steam Heating* includes piping throughout all buildings, for heating, radiators, toilets, lavatories, sinks, wash basins, drinking fountains, etc.
4—*Elevators* include complete apparatus with the exception of the motor.
5—*Electric Lighting and Panel Board Feeds* include all electric light wiring and fixtures and all power wiring, with

the exception of motor or machine connection and individual lights throughout all buildings.

5—*Sprinkler System* includes all Sprinkle apparatus installed in Buildings.

7—*Heating and Ventilating* (Air).

In a similar way machinery and equipment and the other general ledger property accounts should be broken down into their constituent accounts for property ledger purposes. It is no easy task to establish a classification of detail property accounts which will be of the greatest value. It requires a rather long study of the various individual units of property as evidenced by a large number of supporting individual property records. Greater success in the establishment of a proper classification of accounts will be secured if such classification is the result of building up from it the property record, rather than the arbitrary setting-up of a number of detail property accounts and making these accounts absorb rather arbitrarily the detail items.

**Property Records**

In this paper I am making a distinction between property ledger and property records. A property ledger may be said to be a subsidiary ledger containing detail accounts, under proper classifications, and controlled by controlling accounts in the general ledger. In other words a property ledger is what the words imply—a book of accounts for properties. On the other hand a system of plant property records may be briefly designed as a system whereby an individual record is maintained for each unit of plant property, such a record containing all pertinent facts pertaining to the assets so recorded from the time of their acquisition until their disposal. The National Electric Light Association has this to say on the subject:

"Fixed capital is represented by the property actually in existence and it is this actually existing property which the record should at all times show. In other words, the records should contain a continuous inventory of the property in terms of units such as to provide complete identification and proof of the property itself. This in turn requires that the units chosen for the purposes of inventory be completed units rather than units of raw material, labor transportation, etc., since it is only through the medium of completed units that it is possible to show that the property recorded and that actually standing in the field, are one and the same."

The following results are obtainable from an efficient and properly operated property record:

1—A complete history and full description of each important property item is accessible at a central point.

2—A detailed record is available in support of general ledger and property ledger, property accounts.

3—A detailed record is available in support of the depreciation charge thus acting to prevent over or under depreciation.

4—A record of property by locations for management, insurance, taxing, and cost purposes, is available.

5—The accuracy of accounting is increased since all fixed capital accounting is subject to analysis.

6—A record is available in the case of disaster which makes it possible to obtain a description and cost of the property destroyed.

7—Dependable data is in ready form for budgeting purposes.

8—A record of property accountability is available at all times.

9—If the form is properly designed, information is available for accounting, engineering and manufacturing department, and cosolidates at one point various partial records of properties which are usually to be found in the above mentioned departments.

10—A record of the cost of repairs to individual machines, etc., is also available, as a means for gauging the economy of operating certain types of machines, etc.

11—Figures are available for determining fixed charges by any group desired, as the basis for the establishment of certain functional costs.

There are many other advantages to be derived from an up-to-date system of property records, but the above are the principal ones.

There are many forms of property record. Most, unfortunately, are too incomplete to be of the greatest value. Whatsoever the design may be, that is, so far as the form is concerned, it should be planned to provide for the following information:

A—A description by which the property can be readily identified at any time and one which furnishes the engineering and operating departments with reliable and complete technical data.

B—The original location and a history of all subsequent relocations of the unit of property.

C—A record of its cost—original and supplementary, and reference to all documents supporting such costs.

D—A record of repairs and maintenance.

E—Data with respect to loss of value through depreciation.

F—Data with respect to disposition, through sale or abandonment.

Naturally one can make such a record too elaborate. If such is done the whole system may destroy itself by reason of its being top heavy. However, I am inclined to think that just the opposite is true—that most records are far too incomplete to be of the most value to their users. The real value of property records lies in their ability to furnish information whether of a usual or unusual nature, when required,—readily, accurately and in detail. To operate a system giving complete information, requires little if any additional expense over that required to operate an incomplete system.

Quite often concerns make two records of each unit of property so that it is possible to arrange these property records in two different ways—one by kind of property, and the second by location or function. When machinery or equipment is transferred from one location to another, the property card for such machine or equipment is likewise transferred in the file from one position to another, and a record is made on the card as to date of transfer, old location and new location, and sometimes the move order number.

Naturally there is no inflexible rule concerning the type of property record. For certain items or units an individual card may be employed, while quite often it is possible to control certain classes of equipment by groups. When the latter condition prevails a form of ledger sheet may be used, and the control maintained by totals and not by individual items.

The basis for a system of property records is usually on appraisal not necessarily from the dollar standpoint, for this information is of great value for many purposes, but rather from the physical point of view with the additional advantage of the appraiser's opinion as to condition and length of life of the property items in question. With such an inventory available, a good foundation has been laid for the preparation of the individual property records. Once these records are established very little effort is required to handle the work of new acquisitions, transfers, and dispositions, together with such other data as is required for administrative purposes. Like any other system the hard work lies in installing it.

**Effective Accounting Control**

We have referred above to the usual care exercised in acquiring items of fixed property. Let us assume that such an item has been received from the vendor or completed by one of the company's own departments. The first thought which arises is in connection with the establishment of physical control. Usually the property item is given an identifying number either by a stamp or by the attaching of a plate thereto. The latter to be the more preferable procedure.

The property record which is made out upon the installation of this particular item, contains not only a complete description but has an additional tie-in by means of identification number assigned. Some employee in the plant is now directly responsible for the care, protection and use of such equipment. It may be

the chief engineer, the transportation manager, the chief chemist, the office manager, or some other person. In any case someone in the plant should be held accountable for the property and that accountability maintained until release therefrom is secured through proper channels, and in accordance with a standard procedure.

Accountability for the physical property should cease upon its disposition. Requests for the disposal either through transfer, sale, or abandonment, should be required, reasons given for the request, a survey of the situation made, and the request approved or disapproved.

In connection with dollar control as distinguished from physical control, it commences with the acquirement of items of plant property and equipment through purchase and manufacture. The former is evidenced by the vendor's invoice, the latter by a completed shop order. Through the establishment of general ledger controlling accounts for capital facilities, as a necessary part of the accepted classification of accounts, the setting-up of supporting and subsidiary accounts in the property ledger, and the record of cost of the individual items of property, as represented on the property card, a tie-up is afforded and a method of accounting control available.

To quote again from the National Electric Light Association:

"The accounting books should show the cost of fixed capital and since the fixed capital record is to do likewise then if the record of fixed capital expenditures in each case is to be a true and proper one, the fixed capital record and the books of account must be in accord with each other.

"Further, since the minimum detail of the accounting record of costs is determined by the classification of accounts, the fixed capital record should be based upon or so arranged as to tie-in with this same classification in order that it can always be shown that the fixed capital record and the accounting record are in accord not only in total, but in detail."

**Conclusion**

To sum up again the essentials of a complete system of fixed property accounting, I wish to repeat the six principal points in connection therewith.

1—A set of standards by which it is possible to determine what is and what is not a proper charge to capital faciltites.

2—A standard procedure in connection with the acquirement, recordation, transference, and disposal of capital facilities.

3—Detailed instructions as to what expenditures are proper cost charges to capital facilities.

4—A standard classification of property accounts for general ledger and property ledger purposes.

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6—An effective accounting control between the general ledger, property ledger, and property cards—, and a physical control of properties through the individual property cards or records.

## Pacific Board Co. To Add Equipment

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 12, 1929.—The Pacific Straw Paper and Board Company, Longview, Wash., on September 10 announced the addition of new equipment which is to be installed immediately. A building is now being erected to house pulp grinders. The company purchases logs and will grind them for the material in the straw board making.

A pasting machine is being installed and it is stated that a new product of several thicknesses of board is to be made in the plant. A lining machine is another piece of new equipment. The company is also drilling wells, each 38 feet deep and installing a filter at the plant to provide water for the operations. The general output of the factory will be considerably enlarged, according to announcement of officials.

## News of the Boston Paper Trade

[FROM OUR REGULAR CORRESPONDENT]

BOSTON, Mass., September 16, 1929.—The meeting of the New England Paper Merchants Association, which was to have been held at the Harvard Club of Boston September 12, has been postponed until September 19.

The outing of the New England Division of the Salesmen's Association of the Paper Industry has been indefinitely postponed.

Arthur E. Ham & Sons are issuing two attractive sample books. One contains papers demonstrating the use of Malvern Text, made by the Hampshire Paper Company, South Hadley Falls, Mass. Malvern Text is a deckle edge paper in white and six pastel shades, ivory, blue, brown, canary, gray and green, having a finish and texture suitable for the printing of books, folders, broadsides, announcements, booklets, and all printed pieces requiring character and individuality.

The other book shows samples of Old South Bond, which is also made by the Hampshire Paper Company. This paper is designed for use in printing jobs in which cost is the major consideration. Old South Bond is tub-sized and loft-dried.

It is understood that Frank McCarthy is to be the resident salesman at the office of the American Writing Paper Company, of Holyoke, Mass., which is to be opened shortly in this city.

Boston merchants returning from the conference of the American Writing Paper Company at Holyoke report that it was the best ever held in attendance and interest. Among those who attended from this city was D. G. Allen, treasurer of Knight, Allen & Clark, Inc.

The Tileston & Hollingsworth Company is inaugurating an advertising campaign to cover a period of six months and has prepared a series of broadsides, setting forth the merits of Papers of Old-Fashioned Quality. "How," the house organ of this company, contains some highly interesting articles in the September number.

Knight, Allen & Clark, Inc., are to issue in about a month a new price list and catalogue to which they have added a number of attractive lines.

The Poinier-Carmer Company is to entertain the golf-playing box-makers at the Unicorn Country Club, Stoneham, Mass., Tuesday, September 17.

B. C. Spaulding, secretary of the Baird & Bartlett Company, a member of the Sons of Veterans, attended the annual encampment of the Grand Army of the Republic at Portland, Me., last week.

Richard E. Piper, of the sales force of the Baird & Bartlett Company, has returned from a vacation at Naples, Me.

F. S. Park, of the Holyoke Card and Paper Company, called on the local merchants last week.

The Dennison Manufacturing Company has opened its second Boston retail store at 143 Newbury street.

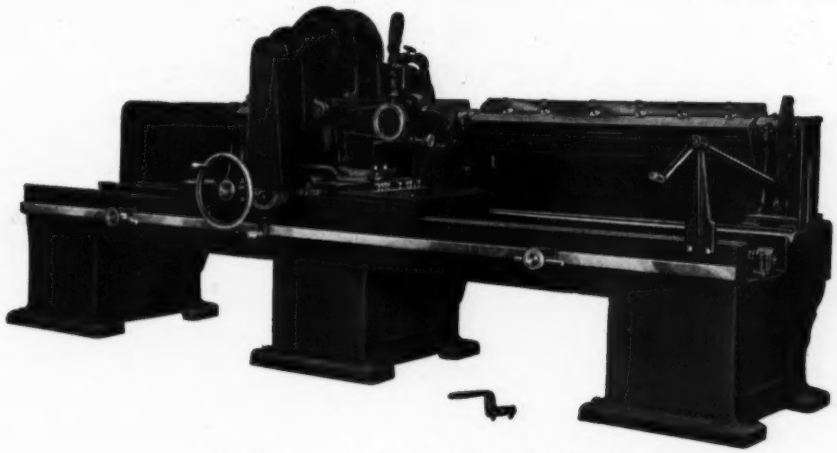
## Sales of Gummed Tape Expand on Coast

[FROM OUR REGULAR CORRESPONDENT]

PORTLAND, Ore., September 14, 1929.—The use of gummed tape in the west and along the Pacific Coast is rapidly gaining in favor, according to the Western Waxed Paper Company, North Portland, a subsidiary of the Crown Zellerbach Corporation. The latest in new buildings and in improved machinery has been provided in this plant recently and the manufacture of Western Gummed Kraft Tape is increasing in volume.

The standard weights for distribution are thirty-five and sixty pounds for sealing tapes and thirty-five and fifty pounds for veneer tapes, and ninety, one hundred and one hundred and twenty pounds for box stays. The company is educating the public through advertising and newspaper publicity that the modern package may be more quickly and attractively sealed by gummed tape than by any other method.

The Western Gummed Kraft Tape is watermarked with W on the gummed side of the tape. The company distributes free samples to increase the sales.



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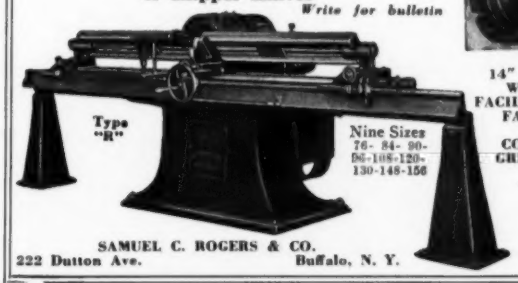


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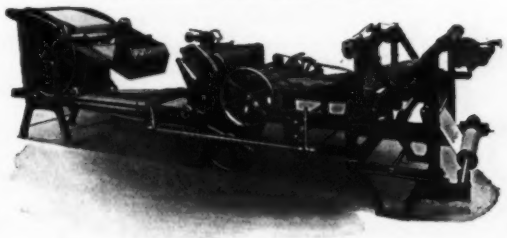

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# Trade Mark Department

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The following are trade mark applications pertinent to the paper field pending in the United States Patent Office, which have been passed for publication and are in line for early registration unless opposition is filed promptly. For further information address National Trade Mark Company, Barrister Bldg., Washington, D. C., trade mark specialists. As an additional service feature to its readers, PAPER TRADE JOURNAL gladly offers to them an advance search free of charge on any mark they may contemplate adopting or registering.

SECURITY PAPER written in a diamond-shaped figure accompanied with the picture of a star.—No. 270,930. Gurney Security Paper Company, Inc., Brooklyn, N. Y. For safety paper.

KING COTTON—No. 281,300. Kalamazoo Stationery Company, Kalamazoo, Mich. For tablet covers.

PIC-WAX—No. 284,079. Regal Paper Company, Pulaski, N. Y. For wax paper.

RAINHOLD—No. 286,266. Oregon Pulp and Paper Company, Salem, Ore. For bond paper.

TOKALON—No. 286,335. The Peerless Paper Mills, Inc., Oaks, Pa. For toilet paper.

FERNBROOK—No. 286,533. Z. & W. M. Crane, Inc., Dalton, Mass. For writing paper and envelopes, and particularly papeteries.

PENPATH—No. 286,534. Z. & W. M. Crane, Inc., Dalton, Mass. For writing paper and envelopes, and particularly papeteries.

EMISSARY—No. 287,027. Strathmore Paper Company, Mittineague, Mass. For book, text, and cover paper and mailing envelopes.

FORMAL—No. 287,028. Strathmore Paper Company, Mittineague, Mass. For papeteries, bristol board; paper and cards for wedding announcements, greeting purposes, and mailing envelopes.

PAR VALUE—No. 287,168. White & Wyckoff Manufacturing Company, Holyoke, Mass. For bond paper.

MAUREEN DECKLEDGE—No. 280,136. Rising Paper Company, Housatonic, Mass. For announcement, book and cover papers.

NORM SYSTEM—No. 285,357. Perceival Howard Keays, Buffalo N. Y. For business forms.

RESIST-O-SUN—No. 285,904. Becker, Smith & Page, Inc., Philadelphia, Pa. For wall paper.

GOLD MEDAL—No. 286,971. American Net and Twine Company, Boston, Mass. For twine.

ENVELET—No. 280,660. Benjamin W. Morse, Washington, D. C. For combined folding letterhead and envelope.

LAWCORE and design—No. 281,128. Ajax Rope Company, Inc., New York, N. Y. For rope.

SOUTHKRAFT—No. 283,545. Bates Valve Bag Corporation, Chicago, Ill. For paper bags.

KELMSCOTT—No. 280,920. Japan Paper Company, New York, N. Y. For hand-made writing and printing paper.

GLASPARENCY—No. 283,462. McLaurin-Jones Company, Brookfield, Mass. For gummed paper.

COLUMBINE BOND and rep. of a columbine flower—No. 284,125. C. F. Hoeckel Blank Book and Lithographing Company, Denver, Col. For bond paper, smooth-finished paper used for printing and writing purposes, and ledger paper.

TEL-O-REK—No. 284,419. Robert R. Powell, White Plains, N. Y. For recording pads or loose sheets for telephone numbers, or other similar purposes.

FRANK SMYTHSON'S "WAFER"—No. 286,211. Frank Smythson, Ltd., London, England. For diaries.

PYRAMID and representation of a pyramid, in center of a seal—No. 286,875. Gilman Paper Company, New York, N. Y. For paper bags.

RUGBY and representation of a football player in center of a seal—No. 286,876. Gilman Paper Company, New York, N. Y. For paper bags.

SPHINX and representation of the Sphinx in center of a seal—No. 286,879. Gilman Paper Company, New York, N. Y. For paper bags.

VIM and representation of a clenched hand in center of a seal—No. 286,880. Gilman Paper Company, New York, N. Y. For paper bags.

FI-NAN-DEX—No. 287,017. Louis A. Savidge, Kansas City, Mo. For cards and books for budget or like accounting.

TWINTEX—No. 287,117. The Columbia Carbon Company, Dayton, Ohio. For inked ribbons and carbon paper.

OUR SPECIAL DIXIE—No. 283,151. The Taylor-Atkins Paper Company, Burnside, Conn. For writing paper and correspondence envelopes, and tablets such as writing tablets, composition tablets, etc.

THENDARA—No. 286,618. The Beverage Paper Company, Indianapolis, Ind. For calendar paper, cover paper, Bristol board, and cardboard.

STAUNCH—No. 286,878. Gilman Paper Company, New York City. For paper bags.

PRAIRIE—No. 277,419. The Gummed Products Co., Troy, Ohio. For gummed paper, print paper, bond paper, book paper and kraft paper.

NEW HAMPSHIRE TISSUE with fanciful picture.—No. 279,583. Wyoming Valley Paper Mill, Northumberland, N. H. For toilet paper.

CANADIAN SPRUCE TISSUE FIBRE with fanciful picture—No. 279,585. Wyoming Valley Paper Mills, Northumberland, N. H. For toilet paper.

VANITY FAIR—No. 279,584. Wyoming Valley Paper Mills, Northumberland, N. H. For toilet paper.

ACME—No. 278,684. Western Tablet and Stationery Corporation, Dayton, Ohio. For tablets and blank books.

EPCORAP—No. 287,574. Economy Paper Company, Milwaukee, Wis. For waxed paper.

LILLIANETTES—No. 287,993. American Tissue Mills, Holyoke, Mass. For paper napkins.

MARIONETTES—No. 287,994. American Tissue Mills, Holyoke, Mass. For paper napkins.

HENRIETTES—No. 287,995. American Tissue Mills, Holyoke, Mass. For paper napkins.

TIP-TOP—No. 287,996. American Tissue Mills, Holyoke, Mass. For tissue and waxed paper.

WIPEMDRI—No. 287,510. U. S. Sanitary Specialties Corporation, Chicago, Ill. For paper towels.

RESOLUTE—No. 288,108. Crown Willamette Paper Company, San Francisco, Cal. For paper towels.

VESPER—No. 288,040. Strathmore Paper Company, Mittineague, Mass. For bristol board, paper and cards for wedding announcements, mailing envelopes.

PANOROTO—No. 287,371. Seaman Paper Company, Chicago, Ill. For rotogravure papers, printing, writing, book and cover papers.

ENVELOPES BY OLD COLONY—No. 287,002. Old Colony Envelope Company, Westfield, Mass. or announcement cards and mailing envelopes.

CARILLON—No. 287,025. Strathmore Paper Company, Mittineague, Mass. For papeteries, bristol board, paper and cards for wedding announcements, etc., and mailing envelopes.

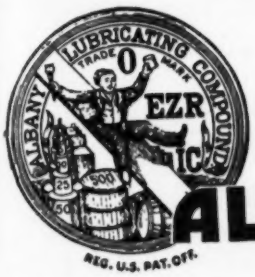
PRODUCTION—No. 287,367. Seaman Paper Company, Chicago, Ill. For rotogravure papers, printing, writing, book and cover papers, and offset papers.

PRODUCTOROTO—No. 287,369. Seaman Paper Company, Chicago, Ill. For rotogravure papers, printing, writing, book and cover papers.

## Pulp Preparing Machine Improvements

[FROM OUR REGULAR CORRESPONDENT]

POTSDAM, N. Y., September 14, 1929.—George E. Mayer, of this place, has been awarded patent rights by the United States patent office for his invention dealing with improvement to pulp preparing machines. One of the devices is a pulp feed regulator and another is a device for controlling the moisture content of pulp. He made application for both patents in October, 1928, and received with the patent grants recognition for a number of patentable features of his invention.

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Paper Merchants
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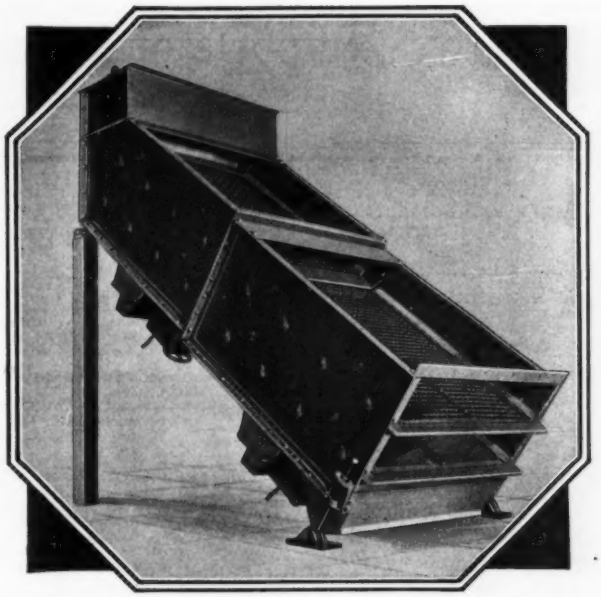

# Hum-mer *Electric* CHIP SCREEN

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These are the features which make the Wood Chip Hummer a profitable investment for pulp and paper mills!

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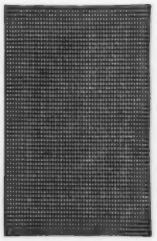

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**CORDUROY**
**WIRES**

# Imports of Paper and Paper Stock

## NEW YORK, BOSTON, PHILADELPHIA AND OTHER PORTS

## NEW YORK IMPORTS

WEEK ENDING SEPTEMBER 14, 1929

### SUMMARY

Cigarette paper .....522 cs.
Wall paper .....5 pkgs., 17 bls., 32 cs.
Paper hangings .....5 pkgs., 4 bls., 4 cs.
Painted paper .....4 cs.
News print paper .....11,581 rolls
Printing paper .....166 bls., 86 cs.
Wrapping paper .....20 bls., 33 cs.
Packing paper .....104 bls.
Writing paper and envelopes.....2 cs.
Writing paper .....18 cs.
Tissue paper .....127 cs.
Colored paper .....38 cs.
Transparent greaseproof paper .....107 cs.
Drawing paper .....82 cs.
Filter paper .....18 cs.
Decalcomania paper .....49 cs.
Metal coated paper .....29 cs.
Surface coated paper .....34 cs.
Baryta coated paper .....257 cs.
Detail paper .....27 cs.
Photo paper .....20 cs.
Silk paper .....1 cs.
Aluminum paper .....46 cs.
Raw hanging stock .....369 rolls
Hart paper (Turbonite) .....378 cs.
Gallic paper .....1 cs.
Raw paper .....6 rolls
Straw board .....726 rolls
Miscellaneous paper .....78 bls., 227 cs.

### CIGARETTE PAPER

P. Lorillard Co., Inc., Anjer, Marseilles, 100 cs.
American Tobacco Co., Roussillon, Bordeaux, 400 cs.
Standard Products Corp., Berengaria, Southampton, 22 cs.

### WALL PAPER

Irving Trust Co., Deutschland, Hamburg, 20 cs.
R. F. Downing & Co., Minnetonka, London, 11 bls., 4 cs.
A. C. Dodman, Jr., Inc., Carinthia, Liverpool, 5 pkgs.
Stone Gross Co., Majestic, Southampton, 1 cs.
A. C. Dodman, Jr., Inc., Majestic, Southampton, 1 ble.
F. A. Binder, Karlsruhe, Bremen, 2 bls.
A. L. Diament & Co., Berengaria, Southampton, 3 cs.
Meadows Wye & Co., Berengaria, Southampton, 2 cs.
Thomas & Pierson, Berengaria, Southampton, 1 cs.
Titan Shipping Co., Berengaria, Southampton, 1 cs.
A. C. Dodman, Jr., Inc., G. Washington, Bremen, 3 bls.

### PAPER HANGINGS

W. H. S. Lloyd & Co., Minnetonka, London, 4 bls., 1 cs.
W. H. S. Lloyd & Co., Carinthia, Liverpool, 5 pkgs.
A. C. Dodman, Jr., Inc., Carinthia, Liverpool, 2 cs.
American Express Co., Mexique, Havre, 1 cs.

### PAINTED PAPER

Titan Shipping Co., Mexique, Havre, 3 cs.
American Express Co., Mexique, Havre, 1 cs.

### NEWS PRINT PAPER

Bank of Montreal, Humberarm, Corner Brook, 11,581 rolls.

### PRINTING PAPER

F. L. Kramer & Co., Luetzow, Bremen, 3 cs.
International Forwarding Co., Veendam, Rotterdam, 20 cs.
Spiral Press, Veendam, Rotterdam, 4 cs.
W. A. Foster & Co., Transylvania, Glasgow, 166 bls.
Dingelstedt & Co., Karlsruhe, Bremen, 7 cs.
P. C. Zuhlke, Karlsruhe, Bremen, 52 cs.

### WRAPPING PAPER

Birn & Wachenheim, Pennland, Antwerp, 14 cs.
Sylvania Industrial Corp., Pennland, Antwerp, 19 cs.
Walker, Goulard, Plehn Co., Keifuku Maru, Hamburg, 20 bls.

### PACKING PAPER

J. P. Heffernan Paper Co., Pennland, Antwerp, 104 bls.

### WRITING PAPER AND ENVELOPES

M. J. Corbett & Co., Berengaria, Southampton, 2 cs.

### WRITING PAPER

H. Gutman, Aquitania, Southampton, 1 cs.
A. C. Cofod, Majestic, Southampton, 1 cs.
Guibout Freres, Majestic, Southampton, 5 cs.
F. C. Gerlach, Majestic, Southampton, 3 cs.
Globe Shipping Co., Majestic, Southampton, 1 cs.
Jas. A. Hearn & Son, Mexique, Havre, 1 cs.
Marshall Field & Co., Mexique, Havre, 6 cs.

### TISSUE PAPER

Old Master Paper & Pulp Co., Deutschland, Hamburg, 62 cs.
F. B. Vandegrift & Co., Carinthia, Liverpool, 15 cs.
F. C. Strype, Carinthia, Liverpool, 3 cs.
Parsons & Whittemore, Inc., Carinthia, Liverpool, 19 cs.
W. J. Byrnes & Co., Aquitania, Southampton, 3 cs.
Standard Products Corp., Berengaria, Southampton, 25 cs.

### COLORED PAPER

F. Murray Hill, Deutschland, Hamburg, 5 cs.
Whiting & Patterson Co., Inc., Deutschland, Hamburg, 1 cs.
S. Gilbert, Karlsruhe, Bremen, 23 cs.
Princess Products Co., Karlsruhe, Bremen, 2 cs.
S. Gilbert, G. Washington, Bremen, 7 cs.

### TRANSPARENT GREASEPROOF PAPER

Central Hanover Bank & Trust Co., Deutschland, Hamburg, 107 cs.

### DRAWING PAPER

Keuffel & Esser Co., Deutschland, Hamburg, 82 cs.

### FILTER PAPER

C. Schleicher Schull Co., Luetzow, Bremen, 9 cs.
H. Reeve Angel & Co., Inc., Caronia, London, 9 cs.

### DECALCOMANIA PAPER

B. F. Drakenfeld & Co., Carinthia, Liverpool, 25 cs. (duplex).
B. F. Drakenfeld & Co., Carinthia, Liverpool, 13 cs. simplex).
C. W. Sellers, G. Washington, Bremen, 11 cs.

### METAL COATED PAPER

Universall Car Loading Co., Deutschland, Hamburg, 2 cs.
Hensel, Bruckman & Lorbacher, Karlsruhe, Bremen, 27 cs.

### SURFACE COATED PAPER

Gevaert Co. of America, Pennland, Antwerp, 13 cs.
P. C. Zuhlke, Karlsruhe, Bremen, 21 cs.

### BARYTA COATED PAPER

Globe Shipping Co., Karlsruhe, Bremen, 26 cs.
Globe Shipping Co., G. Washington, Bremen, 231 cs.

### DETAIL PAPER

Globe Shipping Co., G. Washington, Bremen, 27 cs.

### PHOTO PAPER

J. H. Schroeder Banking Co., Luetzow, Bremen, 12 cs.
W. A. Foster & Co., Aquitania, Southampton, 1 cs.
Eastman Kodak Co., Tatsuno Maru, Osaka, 1 cs.
J. J. Gavin, Berengaria, Southampton, 6 cs.

### SILK PAPER

Whiting & Patterson Co., Inc., Veendam, Rotterdam, 1 cs.

### ALUMINUM PAPER

Catty Foil Co., Karlsruhe, Bremen, 46 cs.

### RAW HANGING STOCK

F. & R. Trading Corp., G. Washington, Bremen, 369 rolls.

### HART PAPER (TURBONITE)

Globe Shipping Co., Deutschland, Hamburg, 378 cs.

### GALLIC PAPER

Keuffel & Esser Co., Caronia, London, 1 cs.

### RAW PAPER

C. Bruning Co., Inc., Veendam, Rotterdam, 6 rolls.

### STRAW BOARD

Walker, Goulard, Plehn Co., Veendam, Rotterdam, 267 rolls.
Perkins, Goodwin Co., Veendam, Rotterdam, 459 rolls.

### MISCELLANEOUS PAPER

Haule Wax Paper Mfg. Co., Deutschland, Hamburg, 5 cs.
F. C. Strype, C. Grande, Genoa, 16 cs.
Hoboken Trust Co., C. Grande, Genoa, 21 cs.
Walker, Goulard, Plehn Co., Keifuku Maru, Hamburg, 12 bls.
Heemsoth, Basse & Co., Veendam, Rotterdam, 53 bls.
Globe Shipping Co., Veendam, Rotterdam, 73 cs.
Keuffel & Esser Co., Veendam, Rotterdam, 5 cs.
P. J. Schweitzer, Rochambeau, Havre, 16 cs.
Japan Paper Co., Rochambeau, Havre, 5 cs.
American Express Co., Bremen, Bremen, 56 cs.
E. Henningson Co., Bremen, Bremen, 13 bls.
Hensel, Bruckman & Lorbacher, Karlsruhe, Bremen, 3 cs.
C. D. Stone Co., Karlsruhe, Bremen, 2 cs.
R. F. Downing & Co., Mexique, Havre, 3 cs.
Japan Paper Co., Mexique, Havre, 1 cs.
J. Beckhard Co., Mexique, Havre, 21 cs.

### RAGS, BAGGINGS, ETC.

Jaffe Products Co., Sud Argentino, Havana, 7 bls. rags.
E. A. Stone, Sud Argentino, Havana, 15 bls. rags.
A. W. Fenton, Inc., Deutschland, Hamburg, 10 bls. rags.
Bank of New York, Deutschland, Hamburg, 18 bls. rags.
I. N. Brand, Hofuku Maru, Oran, 115 bls. bagging.
I. N. Brand, Hofuku Maru, Oran, 300 bls. rags.
——, Pennland, Antwerp, 250 bls. flax pulp.
Equitable Trust Co., Fred. VIII, Copenhagen, 950 bls. rags.
Amtorg Trading Co., Fred. VIII, Copenhagen, 160 bls. rags.
B. D. Kaplan, Carinthia, Liverpool, 25 bls. rags.
Equitable Trust Co., Luetzow, Bremen, 347 bls. rags.
Equitable Trust Co., Luetzow, Bremen, 101 bls. clips.
Fidelity Trust Co., Anjer, Marseilles, 66 bls. rags.
W. Schall & Co., Anjer, Marseilles, 45 bls. rags.
W. Schall & Co., Anjer, Marseilles, 50 bls. jute waste.
A. W. Fenton, Inc., Keifuuku Maru, Hamburg, 120 bls. rags.
V. Galaup, Cabo Tortosa, Marseilles, 24 bls. rags.
S. Birkenstein & Son, Cabo Tortosa, Valencia, 47 bls. rags.
N. E. Berzen, Cabo Tortosa, Bilbao, 34 bls. rags.
S. Birkenstein & Son, Cabo Tortosa, Bilbao, 60 bls. rags.
Central Hanover Bank & Trust Co., Cabo Tortosa, Gijon, 179 bls. rags.
Central Hanover Bank & Trust Co., Veendam, Rotterdam, 23 bls. paper stock.
W. Von Doorn, Veendam, Rotterdam, 41 bls. rags.
Fidelity Trust Co., Maria, Bari, 80 bls. rags.
Anglo South American Trust Co., Transylvania, Glasgow, 49 bls. rags.
Castle & Overton, Inc., Caronia, London, 71 bls. rags.
P. Berlowitz, Exchange, Alexandria, 80 bls. rags.
C. R. Spence, Exeter City, Bristol, 365 bls. rags.
Robert Blank, Exeter City, Bristol, 46 bls. rags.
Guaranty Trust Co., Exhibitor, Genoa, 40 bls. rags.
French American Banking Corp., Exhibitor, Leghorn, 67 bls. rags.
Equitable Trust Co., Thuringia, Hamburg, 301 bls. rags.
F. Stern, Thuringia, Hamburg, 75 bls. rags.
D. M. Hicks, Inc., Ala, Antwerp, 120 bls. flax waste.
Baring Bros. & Co., Ala, Antwerp, 3 bls. rags.
C. Belsky, Waukegan, Havre, 86 bls. rags.
Castle & Overton, Inc., Waukegan, Havre, 108 bls. bagging.
Katzenstein & Keene, Inc., Waukegan, Dunkirk, 90 bls. rags.
Equitable Trust Co., E. Francqui, Antwerp, 52 bls. flax waste.
E. J. Keller Co., Inc., Artigas, ——, 68 bls. bagging.
Irving Trust Co., Artigas, Manchester, 74 bls. paper stock.
Leigh Textile Co., Artigas, Manchester, 95 bls. cotton waste.
Flintkote Co., Artigas, Manchester, 180 bls. new cuttings.
E. Mayer, Artigas, Manchester, 10 bls. rags.
Castle & Overton, Inc., Artigas, Manchester, 226 bls. bagging.
Castle & Overton, Inc., Artigas, Manchester, 38 bls. rags.
Darmstadt, Scott & Courtney, Tatsuno Maru, Osaka, 25 bls. rags.
A. W. Fenton, Inc., G. Washington, Bremen, 183 bls. rags.
Armstrong Cork Co., G. Washington, Bremen, 125 bls. rags.

### OLD ROPE

Brown Bros. & Co., Stavangerfjord, Oslo, 38 bls.
Brown Bros. & Co., Deutschland, Hamburg, 36 bls.
Brown Bros. & Co., Pennland, Antwerp, 123 bls.
Brown Bros. & Co., Saturnia, Trieste, 80 bls.
N. E. Berzen, Cabo Tortosa, Bilbao, 143 bls.
International Purchasing Co., Cabo Tortosa, Pasages, 90 coils.

*(Continued on page 82)*

**Cotton and Paper Rolls**
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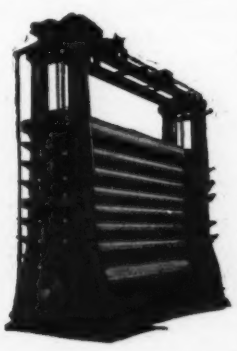
*Established 1836*
**WILMINGTON, DELAWARE.**



# Imports of Paper and Paper Stock

*(Continued from page 80)*

International Purchasing Co., Veendam, Rotterdam, 66 coils.
W. Steck & Co., Veendam, Rotterdam, 50 coils.
Castle & Overton, Inc., Caronia, London, 79 coils.
Brown Bros. & Co., Exeter City, Bristol, 168 coils.
International Purchasing Co., Exhibitor, Genoa, 78 bls., 265 coils.
Brown Bros. & Co., Waukegan, Havre, 181 coils.

CASEIN

Trust Co. of North America, Sud Argentino, Buenos Aires, 250 bags, 15,003 kilos.
Kalbfleisch Corp., Western World, Buenos Aires, 635 bags.
T. M. Duche & Sons, Western World, Buenos Aires, 417 bags.

CHINA CLAY

Moore & Munger, Ryufuku Maru, Fowey, 1,015 tons, 4 cwt.
English China Clays Sales Corp., Ryufuku Maru, Fowey, 1,512 tons, 16 cwt.

WOOD PULP

Chemical Bank & Trust Co., Stavangerfjord, Oslo, 600 bls. sulphite.
National City Bank, Stavangerfjord, Oslo, 800 bls. sulphite.
Castle & Overton, Inc., Deutschland, Hamburg, 354 bls., 53 tons.

WOOD PULP BOARDS

Lagerloef Trading Co., Sparreholm, Kotka, 125 rolls.

WOOD FLOUR

The Burnet Co., Veendam, Rotterdam, 750 bags.

## BALTIMORE IMPORTS

WEEK ENDING SEPTEMBER 14, 1929

Congoleum Nairn Co., Ala, Antwerp, 121 bls. bagging.
Congoleum Nairn Co., Ala, Antwerp, 911 bls. rags.
S. Shapira & Sons, Ala, Antwerp, 6 bls. rags.
National City Bank, Ala, Rotterdam, 477 bls. bagging.
National City Bank, Ala, Rotterdam, 112 bls. rags.
Bulkley, Dunton & Co., Ala, ——, 51 bls. wood pulp, 10 tons.
Castle & Overton, Inc., Ala, Rotterdam, 340 bls. wood pulp, 55 tons.
Bulkley, Dunton & Co., Holger, ——, 1,250 bls. wood pulp.
Bulkley, Dunton & Co., Wanja, ——, 1,125 bls. wood pulp.
Bulkley, Dunton & Co., Eifel, ——, 375 bls. wood pulp.
Bulkley, Dunton & Co., Westfalen, ——, 3,000 bls. wood pulp.
Bulkley, Dunton & Co., Toledo, ——, 6,625 bls. wood pulp.

## PHILADELPHIA IMPORTS

WEEK ENDING SEPTEMBER 14, 1929

Banco Com'l Italiane Trust Co., Cabo Tortosa, Leghorn, 364 bls. rags.
C. B. Richard & Co., Cabo Tortosa, Leghorn, 108 bls. rags.
Castle & Overton, Inc., Cabo Tortosa, Bilbao, 98 bls. rags.
Banco Com'l Italiane Trust Co., Maria, Trieste, 111 bls. rags.
J. A. Steer & Co., Exeter City, Bristol, 201 coils old rope.
J. W. Hampton, Jr., Inc., Exeter City, Bristol, 481 tons china clay.
Castle & Overton, Inc., Exeter City, Bristol, 104 bls. bagging.
Bank of Manhattan Co., Exeter City, Bristol, 96 bls. rags.
J. A. Steer & Co., Exeter City, Bristol, 91 bls. waste paper.
S. Birkenstein & Sons, Exhibitor, Marseilles, 53 coils old manila rope.
National City Bank, Exhibitor, Leghorn, 220 bls. rags.
French American Banking Corp., Exhibitor, Leghorn, 194 bls. rags.
Neidich Process Co., Sparreholm, Helsingfors, 72 cs. tissue paper.
——, Sparreholm, Viborg, 5,475 bls. sulphite.
Johnston Paper Co., Sparreholm, Kotka, 107 bls. news print.
——, Sparreholm, Kotka, 4,536 bls. sulphite.
Lagerloef Trading Co., Sparreholm, Kotka, 284 bls. wood pulp boards.
——, Sparreholm, Tolkis, 676 bls. sulphite.
J. W. Hampton, Jr., & Co., Waukegan, Havre, 3 cs. writing paper.
Castle & Overton, Inc., Waukegan, Havre, 242 bls. rags.
American Sanitary Rag Co., Waukegan, Havre, 117 bls. rags.
Katzenstein & Keene, Inc., Waukegan, Havre, 75 bls. rags.
J. A. Steer & Co., Waukegan, Dunkirk, 58 bls. rags.
E. Butterworth & Co., Inc., Waukegan, Dunkirk, 120 bls. flax waste.
E. Mayer, Waukegan, Dunkirk, 54 bls. rags.
Brown Bros. & Co., Waukegan, Dunkirk, 24 bls. rags.
Katzenstein & Keene, Inc., Waukegan, Dunkirk, 88 bls. rags.
G. Mathes, Waukegan, Dunkirk, 176 bls. rags.
Union Waste Co., Waukegan, Dunkirk, 72 bls. rags.
Bulkley, Dunton & Co., Wanja, ——, 1,250 bls. wood pulp.
Bulkley, Dunton & Co., Griesenheim, ——, 1,250 bls. wood pulp.

## NORFOLK IMPORTS

WEEK ENDING SEPTEMBER 14, 1929

E. Butterworth & Co., Inc., Ala, Antwerp, 72 bls. bagging.
Castle & Overton, Inc., Ala, Antwerp, 170 bls. wood pulp, 27 tons.
E. J. Keller Co., Inc., Bellepline, ——, 53 bls. rags.

## BOSTON IMPORTS

WEEK ENDING SEPTEMBER 14, 1929

E. Butterworth & Co., Inc., Exchange, Alexandria, 133 bls. rags.
Irving Trust Co., Sparreholm, Viborg, 300 bls. sulphate.
——, Sparreholm, Kotka, 2,568 bls. sulphite.
——, Sparreholm, Tolkis, 1,690 bls. sulphite.
Bulkley, Dunton & Co., Fernglen, ——, 6,775 bls. wood pulp.
Bulkley, Dunton & Co., Eifel, ——, 250 bls. wood pulp.
Bulkley, Dunton & Co., Griesenheim, ——, 4,725 bls. wood pulp.

## PORTLAND IMPORTS

WEEK ENDING SEPTEMBER 14, 1929

Moore & Munger, Ryufuku Maru, Fowey, 3,040 tons, 10 cwt. china clay.
English China Clays Sales Corp., Ryufuku Maru, Fowey, 2,363 tons, 14 cwt. china clay.
English China Clays Sales Corp., Ryufuku Maru, Fowey, 1,430 bags, 147 tons china clay.

## Drought Handicaps Paper Mills

GLENS FALLS, N. Y., September 9, 1929.—Many of the paper mills in this district are seriously handicapped as a result of a continued drought which has brought many mill streams in the Adirondacks to new low levels and a most serious situation may develop unless there are heavy rains within the next few days. The Hudson River at this point is lower than at any time since the construction of the Sherman Island power plant of the International Paper Company with the result that the development is now being operated at but twenty-five per cent of its capacity. During the past week the flow at the Sherman Island dam was but 1,270 cubic feet a second. The plant contains four large generators and under normal conditions these are operated twenty-four hours daily. For the past week or more, however, it has been possible to run only part of the equipment and unless there are heavy rains the operations will undergo further curtailment.

Similar conditions prevail throughout Northern New York with the result that a number of paper mills are depending on steam power to supply the operating energy for their plants. Half the power produced by the Mohawk-Hudson Power Corporation is being generated by steam instead of water and indications are that this system will be effective for some time.

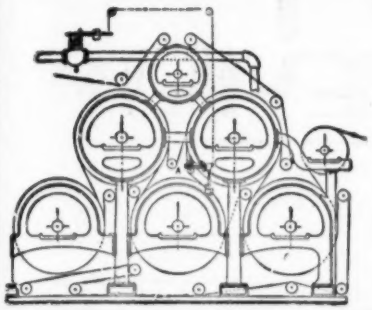
At Warrensburg it was learned that conditions are better than ever before due to the recent enlargement of the town water system. Consequently the Schroon River Pulp and Paper Company resumed operations last Tuesday after having been overhauled and renovated. Three shifts of workers are being used and enough orders are on hand to insure a busy period for all departments.

## To Fight Proposed Freight Rates

AMSTERDAM, N. Y., September 9, 1929.—The Smeallie & Voorhees Paper Company with other industries of the city will cooperate with the Associate Industries of New York State in an effort to show the Public Service Commission that the class freight rates proposed to be established are unjustified. As the first step in the organization of the local movement a meeting of manufacturing interests was held this week at which time arrangements were made for compiling testimony which will be submitted at the hearings to be held in Albany late in October. The Associated Industries plans to send its traffic representative to this city to assist local industries in preparing their case for presentation.

The proposed increase in freight charges is said in some instances to amount to 36 per cent. The railroads are proposing and Examiner Hosmer has tentatively approved tremendous increases in the class rates for the territory lying north of the Ohio and Potomac rivers. These increases apply only to class rate traffic which it is stated constitutes less than five per cent of the total traffic. The increases will amount to more than $50,000,000 and on the New York Central Railroad alone will be over $20,000,000. It is the contention of the Associated Industries that the proposed increases are unjustified and that the railroads serving the state do not need and should not receive any additional revenue from this source. The present first class freight rates from Amsterdam to New York City are 55, 46, 38 and 37 cents. The proposed new rates are 76, 65, 63 and 38 cents. Since the industries of the city are users of the four classes it is not difficult to understand that the proposed increases would affect all seriously.

The Pickles Drying Regulator



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Bleached Sulphite

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# WIRES

EASTWOOD WIRE CORPORATION, BELLEVILLE N.J. U.S.A.

# New York Market Review

Office of the PAPER TRADE JOURNAL,
Wednesday, September 18, 1929.

Trading in the local paper market continued to improve during the past week and the outlook for the closing months of the year is promising. Prices are generally holding to schedule and reports of concessions are infrequent. Sales forces of the leading paper organizations are booking a good volume of orders and are mostly optimistic.

Steadiness prevails in the news print market. Statistics gathered by the News Print Service Bureau show that during August the Canadian mills operated at 80.5 per cent of capacity, United States mills at 79.8 per cent and Newfoundland mills at 107 per cent. Stocks at news print mills in Canada and the United States at the end of August were 55,441 tons, which was equivalent to 3.5 days average production.

Paper board production is being maintained in good volume. Consumption is well up to average for the time of year but the price situation continues unsatisfactory. The fine paper market is exhibiting a strong undertone. Writing paper is decidedly firm. Some improvement was noticed in the coarse paper market and wrapping paper is beginning to move more freely.

### Mechanical Pulp

The ground wood market is practically unchanged. Offerings of both domestic and imported mechanical pulp are still limited, due to curtailed operations here and abroad. Shipments against contract are being maintained in a normal manner. Prices remain steady and unchanged and there is little talk of concessions around.

### Chemical Pulp

Conditions in the chemical pulp market are satisfactory. Both domestic and foreign producers are well booked ahead on most grades. Easy bleaching sulphite continues to display considerable strength. Bleached sulphite is slightly easier, although prices remain unchanged. Kraft pulp and Mitcherlich unbleached are steady to firm. Inquiries for future business are fairly numerous.

### Old Rope and Bagging

The old rope market is in a sound position. Domestic and imported old manila rope are in excellent request and small mixed rope is going forward in good volume. Prices remain unaltered, in most instances. The bagging market is showing signs of improvement. Scrap bagging is steady and gunny scrap is fairly active. Prices remain unchanged.

### Rags

Most of the business transacted in the local rag market during the past week was along routine lines. Domestic cotton cuttings were moderately active. Khaki cuttings are displaying more strength than of late. Mixed rags are fairly steady. Roofing rags are moving in satisfactory volume for the season. The foreign rag market continues rather quiet.

### Waste Paper

The paper stock market is not so active as usual at this time of year, but trading may be more lively in the near future when the mills will be in a position to replenish their supplies. Soft white shavings are displaying more strength than of late and are now quoted at from $2.60 to $2.70. Demand for book stock is improving steadily. The lower grades are rather dull at present.

### Twine

Several months ago the company received a shipment of pulp- market. With demand for wrapping paper expanding the outlook for the twine industry for the remaining months of the year is decidedly promising. Prices are generally holding to the levels which have prevailed for some time past and shading is infrequent.

## Special Paper For Russian Soviet

[FROM OUR REGULAR CORRESPONDENT]

POTSDAM, N. Y., September 14, 1929.—The Racquette River Paper Company is completing a contract calling for a large quantity of special paper for the Soviet Government of Russia which has kept the firm exceptionally busy for several weeks past. Shipment is being made through the Soviet representatives in New York and the route is by rail to New York, thence by boat to Odessa, and from there by rail to Leningrad. The paper is being used for government purposes, according to officials.

A recent shipment of fifty tons was made and the last to be sent during the past few weeks contained five tons. It is expected that additional shipments will be made in the next few weeks and the firm has enlarged its working force in an effort to fill the large contract on scheduled time. The paper is shipped in rolls and securely crated in wooden cases.

Several months ago the company received a shipment of pulpwood from the Russian Soviet, imported by Daniel M. Hicks, Inc., agents, of 200 Fifth avenue, New York, with which they carried on some experimental work, and it is understood that the experiments worked out satisfactorily. Despite the distance which the wood had to travel the price was not found to be prohibitive because of the low labor costs in the Soviet republic. It is understood that a representative of the Racquette River Paper Company will visit Russia next year and it is very likely that additional shipments of the wood will be received at the local plant.

## Back St. Regis Paper Plan

The recommendation of the directors of the St. Regis Paper Company to change each of the authorized 1,000,000 shares of no par common stock into four shares of common stock of $10 par value, to give the preferred stock of the company four votes a share and to increase the authorized number of shares of common stock of the company to 7,500,000 of $10 par shares, was approved on Monday of this week by the stockholders.

The board voted to offer 800,000 shares of the new stock for subscription at $25 per share in the ratio of one for four to stockholders of record September 20. These rights will expire October 21.

## Soviet Pulpwood Imported Through Baltimore

[FROM OUR REGULAR CORRESPONDENT]

PHILADELPHIA, Pa., September 16, 1929.—One of the first cargoes of pulpwood to come to the United States from Russia was unloaded last week at the Port of Baltimore from the motor ship *Nicoline Maersk*. M. Makodzub, vice-president of the Amtorg Trading Company, commercial representatives of the Soviet Government, came to Baltimore from New York to inspect the cargo. It consisted of 3,312 cords of pulpwood, loaded at Archangel, and was imported through Daniel M. Hicks, Inc., agents, of 200 Fifth avenue, New York.

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Cylinders—Ton Tanks—Tank Cars — 76%—Solid Liquid Flake
**Arnold, Hoffman & Co. Inc. Sole Agents**
PROVIDENCE BOSTON NEW YORK PHILADELPHIA CHARLOTTE

# Miscellaneous Markets

Office of the PAPER TRADE JOURNAL,
Wednesday, September 18, 1929.

BLANC FIXE.—The position of the blanc fixe market is practically unchanged. Prices are generally holding to schedule without difficulty. The pulp is quoted at from $42.50 to $45.00 per ton, in bulk, while the powder is offered at from 3¾ cents to 4½ cents per pound, in barrels, at works.

BLEACHING POWDER.—Conditions in the bleaching powder market are fairly satisfactory. The contract movement is well up to average for the season. Prices remain steady and unchanged. Bleaching powder is selling at from $2.00 to $2.35 per 100 pounds, in large drums, at works.

CASEIN.—Steadiness prevails in the casein market. Domestic casein is still quoted at from 15¼ cents to 16 cents per pound. Argentine standard ground is selling at from 15¼ cents to 16 cents per pound, and finely ground at from 16 cents to 16½ cents per pound, all in bags, car lot quantities.

CAUSTIC SODA.—The caustic soda market is exhibiting a strong undertone. Shipments against contract are going forward in good volume. Prices are unchanged. Solid caustic soda is quoted at from $2.90 to $2.95 and the flake and the ground at from $3.30 to $3.35 per 100 pounds, in large drums, at works.

CHINA CLAY.—Most of the business transacted in the china clay market during the past week was along routine lines. Prices remain steady and unchanged. Imported china clay is quoted at from $15 to $25 per ton, ship side, while domestic paper making clay is selling at from $8 to $13 per ton, at mine.

CHLORINE.—Supplies of chlorine are going forward to the paper mills in satisfactory volume. Prices are holding to previously quoted levels. Chlorine is quoted at 3 cents per pound, in tanks, or multi-unit cars, at works, on standard contracts. The spot quotation ranges from 3¼ cents to 3½ cents per pound.

ROSIN.—Some improvement was noticed in the rosin market. The grades of gum rosin used in the paper mills are now quoted at from $9.05 to $9.10 per 280 pounds, in barrels, on dock. Wood rosin is selling at $7.00 to $8.05 per 280 pounds, in barrels, at southern shipping points.

SALT CAKE.—Offerings of salt cake are decidedly limited and the market continues very firm. Inquiries for future requirements are numerous. Prices are steady. Salt cake is quoted at from $17 to $21 per ton, while chrome salt cake is still selling at from $14 to $15 per ton, in bulk, at works.

SODA ASH.—Demand for soda ash is persistent. Offerings are about sufficient to take care of current requirements. Prices are holding to schedule without difficulty. Contract quotations on soda ash, in car lots, at works, are as follows: in bags, $1.32½, and in barrels, $1.55.

STARCH.—Trading in the starch market was moderately active during the past week. Supplies are moving to the paper mills in normal volume for the time of year. Prices remain unchanged. Special paper making starch is quoted at $3.82 per 100 pounds, in bags, and at $3.99 per 100 pounds, in barrels, at works.

SULPHATE OF ALUMINA.—No radical changes were recorded in the sulphate of alumina market. Shipments against contract were normal. Prices remain unaltered. Commercial grades of sulphate of alumina are quoted at from $1.40 to $1.55 and iron free at from $1.90 to $2.05 per 100 pounds, in bags, at works.

SULPHUR.—Paper mill demand for sulphur is well up to average. Prices are steady and unchanged. Sulphur is quoted at $18 per ton, in lots of 1,000 tons, or over, on yearly contracts, and at $20 per ton for any smaller quantity over that period. On spot and near by car loads, the quotation is $21 per ton.

TALC.—The talc market was fairly active during the past week. Contract shipments are moving in normal volume. Prices are holding to previously quoted levels. Domestic talc is selling at from $16 to $18 per ton, while imported talc is offered at from $18 to $20 per ton, in bags, ship side.

# Market Quotations

## Paper

(F. o. b. Mill)

| | | |
|---|---|---|
| Ledgers | 11.00 | @38.00 |
| Bonds | 9.00 | @53.25 |
| Writings— | | |
| Extra Superfine | 14.00 | @32.00 |
| Superfine | 14.00 | @32.00 |
| Tub sized | 10.00 | @15.00 |
| Engine sized | 8.00 | @11.00 |
| Book, Cased— | | |
| S. & S. C. | 6.00 | @ 7.50 |
| M. F. | 5.75 | @ 7.00 |
| Coated and Enamel | 7.50 | @12.00 |
| Lithograph | 7.50 | @12.00 |
| Tissues—Per Ream— | | |
| White No. 1 | .75 | @ 1.00 |
| Anti-Tarnish | 1.35 | @ 1.90 |
| Colored | 1.00 | @ 2.00 |
| White No. 2 | .75 | @ .80 |
| Kraft | 1.00 | @ 1.10 |
| Manila | .75 | @ .80 |
| Kraft— | | |
| No. 1 Domestic | 6.25 | @ 6.50 |
| No. 2 Domestic | 5.25 | @ 5.50 |
| Southern | 4.25 | @ 4.50 |
| Imported | 6.50 | @ 7.00 |
| Manila— | | |
| No. 1 Jute | 9.00 | @ 9.25 |
| No. 2 Jute | 7.75 | @ 8.50 |
| No. 1 Wood | 4.75 | @ 5.25 |
| No. 2 Wood | 4.00 | @ 4.50 |
| Butchers | 3.75 | @ 4.25 |
| Fibre Papers— | | |
| No. 1 Fibre | 5.00 | @ 5.50 |
| No. 2 Fibre | 4.75 | @ 5.25 |
| Common Bogus | 2.75 | @ 3.00 |
| Screenings | 3.00 | @ 3.25 |
| Card Middles | 4.00 | @ 5.00 |
| Glassine— | | |
| Bleached, basis 25 lbs. | 13.00 | @16.00 |
| Bleached, basis 20 lbs. | 15.00 | @16.00 |

(Delivered New York)

| | | |
|---|---|---|
| News, per ton— | | |
| Rolls, contract | 62.00 | @ — |
| Rolls, spot | 62.00 | @ — |
| Sheets | 67.00 | @ — |
| Side Runs | 47.00 | @52.00 |
| Boards—per ton— | | |
| News | 37.50 | @40.00 |
| Straw | 52.50 | @55.00 |
| Chip | 35.00 | @37.50 |
| Binders' Boards | 65.00 | @70.00 |
| Sgl. Mla. Ll. Chip | 47.50 | @50.00 |
| Wood Pulp | 80.00 | @85.00 |
| 65 Test Jute Liner | 52.50 | @ — |
| 85 Test Jute Liner | 55.00 | @ — |

## Mechanical Pulp

(On Dock)

| | | |
|---|---|---|
| No. 1 Imported— | | |
| Moist | 30.00 | @32.00 |
| Dry | 32.00 | @34.00 |

(F. o. b. Mill)

| | | |
|---|---|---|
| No. 1 Domestic | 26.00 | @30.00 |
| Screenings | 15.00 | @20.00 |

## Chemical Pulp

(On Dock, Atlantic Ports)

| | | |
|---|---|---|
| Sulphite (Imported)— | | |
| Bleached | 3.75 | @ 4.40 |
| Easy Bleaching | 3.00 | @ 3.25 |
| No. 1 strong unbleached | 2.70 | @ 3.00 |
| Mitscherlich unbleached | 2.80 | @ 3.25 |
| No. 2 strong unbleached | 2.40 | @ 2.50 |
| No. 1 Kraft | 2.40 | @ 2.65 |
| No. 2 Kraft | 2.35 | @ 2.50 |
| Sulphate— | | |
| Bleached | 3.60 | @ 3.85 |

(F. o. b. Pulp Mill)

| | | |
|---|---|---|
| Sulphite (Domestic)— | | |
| Bleached | 3.40 | @ 4.75 |
| Easy Bleaching Sulphite | 2.65 | @ 3.00 |
| News Sulphite | 2.50 | @ 2.70 |
| Mitscherlich | 3.00 | @ 3.25 |
| Kraft (Domestic) | 2.50 | @ 3.30 |
| Soda Bleached | 3.10 | @ 3.25 |
| Sulphate Screenings— | | |
| Coarse | .75 | @ .95 |
| Refined | 1.65 | @ 1.85 |

## Domestic Rags

New Rags

(Prices to Mill f. o. b. N. Y.)

| | | |
|---|---|---|
| Shirt Cuttings— | | |
| New White, No. 1 | 11.00 | @11.50 |
| New White, No. 2 | 8.00 | @ 8.50 |
| Silesias No. 1 | 7.50 | @ 8.00 |
| New Unbleached | 11.00 | @11.50 |
| New Blue Prints | 5.25 | @ 5.50 |
| New Soft Blacks | 5.25 | @ 5.75 |
| Blue Overall | 7.50 | @ 8.00 |
| Washables | 4.75 | @ 5.25 |
| Fancy | 5.75 | @ 6.25 |
| Mixed Khaki Cuttings | 4.75 | @ 5.25 |
| Pink Corset Cuttings | 8.00 | @ 8.50 |
| O. D. Khaki Cuttings | 5.15 | @ 5.75 |
| Men's Corduroy | 3.75 | @ 4.25 |
| New Mixed Blacks | 3.50 | @ 3.75 |

Old Rags

| | | |
|---|---|---|
| White, No. 1— | | |
| Repacked | 5.50 | @ 6.00 |
| Miscellaneous | 4.50 | @ 5.00 |
| White, No. 2— | | |
| Repacked | 3.00 | @ 3.50 |
| Miscellaneous | 2.50 | @ 2.75 |
| St. Soiled, White | 2.00 | @ 2.15 |
| Thirds and Blues— | | |
| Repacked | 2.25 | @ 2.50 |
| Miscellaneous | 1.75 | @ 2.00 |
| Black Stockings | 3.25 | @ 3.75 |
| Roofing Rags— | | |
| Cloth Strippings | 1.70 | @ 1.80 |
| No. 1 | 1.70 | @ 1.80 |
| No. 2 | 1.55 | @ 1.65 |
| No. 3 | 1.30 | @ 1.40 |
| No. 4 | 1.25 | @ 1.35 |
| No. 5A | .90 | @ 1.05 |

## Foreign Rags

New Rags

| | | |
|---|---|---|
| New Dark Cuttings | 2.50 | @ 3.00 |
| New Mixed Cuttings | 2.75 | @ 3.25 |
| New Light Silesias | 7.00 | @ 7.50 |
| Light Flannelettes | 7.50 | @ 8.00 |
| Unbleached Cuttings | 10.00 | @11.00 |
| New White Cuttings | 10.50 | @11.50 |
| New Light Oxfords | 7.00 | @ 7.50 |
| New Light Prints | 5.50 | @ 6.50 |

Old Rags

| | | |
|---|---|---|
| No. 1 White Linens | 7.50 | @ 8.25 |
| No. 2 White Linens | 5.75 | @ 6.75 |
| No. 3 White Linens | 4.75 | @ 5.25 |
| No. 4 White Linens | 3.00 | @ 3.50 |
| No. 1 White Cotton | 5.50 | @ 6.50 |
| No. 2 White Cotton | 4.50 | @ 5.50 |
| No. 3 White Cotton | 3.00 | @ 4.00 |
| No. 4 White Cotton | 1.90 | @ 2.15 |
| Extra Light Prints | 2.75 | @ 3.25 |
| Ord. Light Prints | 2.25 | @ 2.50 |
| Med. Light Prints | 2.00 | @ 2.10 |
| Dutch Blue Cottons | 2.25 | @ 2.40 |
| French Blue Linens | 2.75 | @ 2.85 |
| German Blue Linens | 2.35 | @ 2.55 |
| German Blue Cottons | 2.15 | @ 2.25 |
| Checks and Blues | 1.85 | @ 2.00 |
| Lindsay Garments | 1.85 | @ 1.95 |
| Dark Cottons | 1.60 | @ 1.65 |
| Old Shopperies | 1.55 | @ 1.60 |
| New Shopperies | 1.50 | @ 1.60 |
| French Blues | 2.10 | @ 2.25 |

## Old Rope and Bagging

(Prices to Mill f. o. b. N. Y.)

| | | |
|---|---|---|
| Gunny No. 1— | | |
| Foreign | 1.60 | @ 1.70 |
| Domestic | 1.70 | @ 1.75 |
| Wool Tares, light | 1.60 | @ 1.65 |
| Wool Tares, Heavy | 1.60 | @ 1.70 |
| Bright Bagging | 1.60 | @ 1.70 |
| Small Mixed Rope | 1.25 | @ 1.40 |
| Manila Rope— | | |
| Foreign | 4.25 | @ 4.40 |
| Domestic | 4.75 | @ 5.00 |
| New Burlap Cut | 2.75 | @ 3.00 |
| Hessian Jute Threads— | | |
| Foreign | 3.50 | @ 4.00 |
| Domestic | 3.25 | @ 3.50 |

## Old Waste Papers

(F. o. b. New York)

| | | |
|---|---|---|
| Shavings— | | |
| Hard, white, No. 1 | 3.25 | @ 3.50 |
| Hard, white, No. 2 | 2.40 | @ 2.55 |
| Soft, White, No. 1 | 2.60 | @ 2.70 |
| White envelope cuttings | 3.00 | @ 3.50 |
| Flat Stock— | | |
| Stitchless | 1.50 | @ 1.60 |
| Overissue Mag. | 1.50 | @ 1.60 |
| Solid Flat Book | 1.40 | @ 1.50 |
| Crumpled No. 1 | 1.00 | @ 1.10 |
| Solid Book Ledger | 2.00 | @ 2.10 |
| Ledger Stock | 1.40 | @ 1.50 |
| New B. B. Chips | .65 | @ .75 |
| Manilas— | | |
| New Env. Cut | 2.40 | @ 2.60 |
| New Cuttings | 1.50 | @ 1.75 |
| Extra No. 1 old | 1.25 | @ 1.35 |
| Print | .75 | @ .80 |
| Container | .57½ | @ .60 |
| Bogus Wrapper | .75 | @ .85 |
| Old Kraft Machine Compressed bales | 1.85 | @ 2.00 |
| News— | | |
| No. 1 White News | 1.65 | @ 1.75 |
| Strictly Overissue | .75 | @ .80 |
| Strictly Folded | .60 | @ .65 |
| No. 1 Mixed Paper | .47½ | @ .50 |
| Common Paper | .30 | @ .35 |

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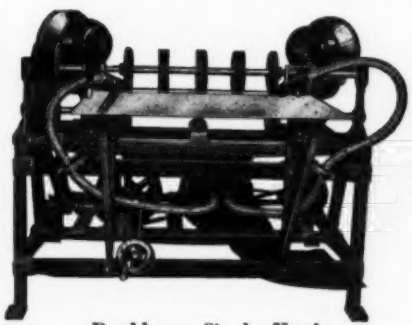

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### Twines
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Cotton— | | | |
| No. 1 | .39 | @ | .40 |
| No. 2 | .37 | @ | .38 |
| No. 3 | .36 | @ | .37 |
| B. C., 18 basis | .38 | @ | .40 |
| A. B. Italian, 18 basis | .48 | @ | .53 |
| Finished Jute— | | | |
| Dark 18 basis | .24 | @ | .25 |
| Light 18 basis | .27 | @ | .28 |
| Jute Wrapping, 3-6 Ply— | | | |
| No. 1 | .19 | @ | .21 |
| No. 2 | .18 | @ | .20 |
| Tube Rope— | | | |
| 4-ply and larger | .16 | @ | .17 |
| Fine Tube Yarn— | | | |
| 5-ply and larger | .21 | @ | .25 |
| 4-ply | .25 | @ | .29 |
| 3-ply | .28 | @ | .32 |
| Unfinished India— | | | |
| Basis | .13 | @ | .14 |
| Paper Makers Twine | | | |
| Balls | .11 | @ | .12 |
| Box Twine, 2-3 ply | .15 | @ | .17 |
| Jute Rope | .17 | @ | .19 |
| Amer. Hemp, 6 | .29 | @ | .31 |
| Sisal Hay Rope— | | | |
| No. 1 Basis | .16 | @ | .18 |
| No. 2 Basis | .14 | @ | .16 |
| Sisal Lath Yarn— | | | |
| No. 1 | .14 | @ | .16 |
| No. 2 | .12 | @ | .14 |
| Manila Rope | .22 | @ | .24 |

## CHICAGO

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Rag Bond | .30 | @ | .53¼ |
| Water Marked Sulphite Bond | .09 | @ | .12 |
| Sulphite Bond | .06¾ | @ | .11 |
| Superfine writing | .18 | @ | .24 |
| No. 1 fine writing | .12 | @ | .18 |
| No. 2 fine writing | .12 | @ | .14 |
| No. 3 fine writing | .08½ | @ | .12 |
| No. 1 M. F. Book | .06½ | @ | .07¼ |
| No. 2 M. F. Book | .05¼ | @ | .06¼ |
| No. 1 S.&S.C. Book | .06¾ | @ | .07¾ |
| No. 2 S.&S.C. Book | .05¾ | @ | .06½ |
| Coated Book | .07½ | @ | .12 |
| Coated Label | .07½ | @ | .10 |
| No. 1 Manila | .04¾ | @ | .05¾ |
| No. 1 Fibre | .04¾ | @ | .05¼ |
| No. 2 Manila | .04¼ | @ | .04¾ |
| Butcher's Manila | .04 | @ | .04½ |
| No. 1 Kraft | .06¼ | @ | .06½ |
| Southern Kraft | 4.25 | @ | 4.50 |
| No. 2 Kraft | .04 | @ | .04¼ |
| Wood Tag Boards | .04¼ | @ | .06¼ |
| Sulphite Screenings | .03 | @ | .03¼ |
| Manila Tissue— | | | |
| 24x36 Sheet | .07 | @ | .07¼ |
| White Tissue— | | | |
| 20x30 Sheet | .07¼ | @ | .07½ |
| (Delivered Central Territory) | | | |
| News, per ton— | | | |
| Rolls, contract | 62.00 | @ | — |
| Sheets | 67.00 | @ | — |
| Boards, per ton— | | | |
| Plain Chip | 37.50 | @ | 42.50 |
| Solid News | 47.50 | @ | — |
| Solid News | 40.00 | @ | 45.00 |
| Manila Lined Chip | 50.00 | @ | 55.00 |
| Container Lined— | | | |
| 85 Test | 65.00 | @ | 70.00 |
| 100 Test | 70.00 | @ | — |

### Old Papers
(F. o. b. Chicago)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 2.20 | @ | 2.25 |
| White Env. Cuttings | 2.40 | @ | 2.50 |
| No. 1 Soft Shavings | 2.00 | @ | 2.10 |
| No. 1 Mixed | .90 | @ | 1.00 |
| No. 2 Mixed | .70 | @ | .75 |
| Ledger & Writings | 1.25 | @ | 1.35 |
| Solid Books | 1.25 | @ | 1.30 |
| Blanks | 1.40 | @ | 1.50 |
| Kraffts | 1.60 | @ | 1.75 |
| New Kraft Cuts | 2.15 | @ | 2.25 |
| Manila Envelope Cuttings | 1.65 | @ | 1.75 |
| Ex. No. 1 Manila | 1.30 | @ | 1.45 |
| Print Manila | .75 | @ | .80 |
| Folded News (overissue) | .80 | @ | .85 |
| Old Newspapers— | | | |
| No. 1 | .65 | @ | .70 |
| No. 2 | .60 | @ | .65 |
| Mixed Papers— | | | |
| No. 1 | .60 | @ | .65 |
| Roofing Stocks— | | | |
| (F. o. b. Chicago, net cash) | | | |
| No. 1 | 30.00 | @ | — |
| No. 2 | 28.00 | @ | — |

## PHILADELPHIA

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Bonds | .06 | @ | .40 |
| Ledgers | .09 | @ | .40 |
| Writings— | | | |
| Superfine | .12½ | @ | .18 |
| Extra fine | .18 | @ | .22 |
| Fine | .17 | @ | .26 |
| Fine, No. 2 | .15 | @ | .25 |
| Fine, No. 3 | .10 | @ | .20 |
| Book, M. F. | .05½ | @ | .07 |
| Book, S. S. & C. | .06 | @ | .07½ |
| Book, Coated | .09½ | @ | .16 |
| Coated Lithograph | .07 | @ | .11 |
| Label | .07 | @ | .11 |
| No. 1 Jute Manila | .08 | @ | .09 |
| Manila Sul., No. 1 | .04 | @ | .05½ |
| Manila No. 2 | .03 | @ | .04 |
| No. 2 Kraft | .06 | @ | .06½ |
| No. 1 Kraft | .06½ | @ | .07 |
| Common Bogus | .03½ | @ | .04 |
| (Delivered Philadelphia) | | | |
| News Print Rolls | 62.00 | @ | — |
| Straw Board | 52.50 | @ | 75.00 |
| News Board | 35.00 | @ | 40.00 |
| Chip Board | 32.00 | @ | 40.00 |
| Wood Pulp Board | 85.00 | @ | 95.00 |
| Binder Boards— | | | |
| No. 1, per ton | 75.00 | | |
| No. 2, per ton | 70.00 | | |
| Carload lots | 68.00 | @ | 70.00 |
| Tarred Felts— | | | |
| Regular | 55.50 | @ | 57.00 |
| Slaters (per roll) | .84 | @ | .94 |
| Best Tarred, 1-ply (per roll) | 1.95 | @ | 2.10 |
| Best Tarred, 2-ply (per roll) | 1.50 | @ | 1.60 |
| Best Tarred, 3-ply | 2.00 | @ | 2.25 |

### Domestic Rags (New)
(Price to Mill, f. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White, No. 1 | .10½ | @ | .11 |
| New White, No. 2 | .07 | @ | .07½ |
| Light Silesias | .07 | @ | .07½ |
| Silesias, No. 1 | .07 | @ | .09 |
| Black Silesia, soft | .05 | @ | .05½ |
| New Unbleached | .10½ | @ | .11 |
| Washable, No. 1 | .04½ | @ | .05 |
| Blue Overall | .07½ | @ | .08 |
| Cottons—According to grades— | | | |
| Washable, No. 2 | .03 | @ | — |
| New Blue | .03 | @ | .03½ |
| Fancy | .05½ | @ | .06 |
| New Black Soft | .05 | @ | .05¾ |
| New Light Seconds | .02½ | @ | .03 |
| New Dark Seconds | 1.85 | @ | 2.00 |
| Khaki Cuttings— | | | |
| No. 1 O. D. | .05½ | @ | .05¾ |
| No. 2 Mixed | .04½ | @ | .04¾ |
| Corduroy | .03 | @ | .03½ |
| New Canvas | .08½ | @ | .09 |
| New Black Mixed | .03¾ | @ | .04½ |

### Bagging
(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Gunny, No. 1— | | | |
| Foreign | 1.50 | @ | 1.60 |
| Domestic | 1.75 | @ | — |
| Manila Rope | 3.50 | @ | 4.00 |
| Sisal Rope | 1.50 | @ | — |
| Mixed Rope | 1.10 | @ | 1.25 |
| Scrap Burlaps— | | | |
| No. 1 | 1.50 | @ | 1.60 |
| No. 2 | 1.10 | @ | 1.20 |
| Wool Tares, heavy | 3.00 | @ | — |
| Mixed Strings | 1.15 | @ | 1.25 |
| No. 1, New Light Burlap | 2.50 | @ | 2.75 |
| New Burlap Cuttings | 2.00 | @ | 2.25 |

### Old Papers
(F. o. b. Phila.)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 3.20 | @ | 3.25 |
| No. 2 Hard White | 2.75 | @ | 3.00 |
| No. 1 Soft White | 2.80 | @ | 2.90 |
| No. 2 Soft White | 1.80 | @ | 1.90 |
| No. 1 Mixed | 1.50 | @ | 1.60 |
| No. 2 Mixed | .90 | @ | 1.00 |
| Solid Ledger Stock | 1.85 | @ | 1.90 |
| Writing Paper | 1.60 | @ | 1.65 |
| No. 1 Books, heavy | 1.40 | @ | 1.50 |
| No. 2 Books, light | 1.05 | @ | 1.15 |
| No. 1 New Manila | 2.40 | @ | 2.50 |
| No. 1 Old Manila | 1.50 | @ | 1.60 |
| Print Manila | .95 | @ | 1.00 |
| Container Manila | .85 | @ | .90 |
| Old Kraft | 2.25 | @ | 2.50 |
| Common paper | .50 | @ | .55 |
| No. 1 Mixed Paper | .60 | @ | .65 |
| Straw Board, Chip | .60 | @ | .65 |
| Binders Board, Chip | .60 | @ | .65 |
| Overissue News | .80 | @ | .85 |
| Old Newspaper | .50 | @ | .55 |

### Domestic Rags (Old)

| | | | |
|---|---|---|---|
| White, No. 1— | | | |
| Repacked | 4.25 | @ | 4.50 |
| Miscellaneous | 3.50 | @ | 3.75 |
| White, No. 2 | 2.00 | @ | 2.25 |
| Thirds and Blues— | | | |
| Repacked | 2.00 | @ | 2.25 |
| Miscellaneous | 1.60 | @ | 1.80 |
| Black Stockings (Export) | 3.90 | @ | 4.25 |
| Roofing Stock— | | | |
| Foreign No. 1 | 1.65 | @ | 1.75 |

## BOSTON

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ledgers— | | | |
| Sulphite | .07½ | @ | .15 |
| Rag content | .15 | @ | .30 |
| All rag | .38 | @ | .52½ |
| Bonds— | | | |
| Sulphite | .06½ | @ | .11½ |
| Rag content | .15 | @ | .30 |
| All rag | .36½ | @ | .65 |
| Writings | .07 | @ | .20 |
| Superfines | .11 | @ | .31 |
| Book, Super | .06 | @ | .09 |
| Book, M. F. | .05¾ | @ | .08½ |
| Book, Coated | .08½ | @ | .20 |
| Coated Litho | .09 | @ | .12 |
| Label | .09½ | @ | .15 |
| Jute Manila No. 1 | .11 | @ | .13 |
| Manila, Sul. No. 1 | .04¾ | @ | .06½ |
| Manila, Sul. No. 2 | .03¾ | @ | .04½ |
| No. 1 Kraft | .06¼ | @ | .06½ |
| No. 2 Kraft | .04½ | @ | .05½ |
| Common Bogus | .02 | @ | .02¾ |
| Delivered New England points | | | |
| News Print Rolls | 61.50 | @ | — |
| Straw Boards, rolls .009 | | | 52.50 |
| Straw Board in Sheets, basis 35s to 70s | 54.50 | @ | 55.00 |
| Filled News Board | 37.50 | @ | 40.00 |
| Chip Board | 35.00 | @ | 37.50 |
| Single Manila Lined Chip | 47.50 | @ | 50.00 |
| Single White, Patent Coated Newsboard Bender | 65.00 | @ | 80.00 |
| Wood Pulp Board | 80.00 | @ | 85.00 |
| Binder Boards | 70.00 | @ | 75.00 |
| (F. o. b. Mill) | | | |
| Tarred Felts— | | | |
| Regular, carload lots | 65.00 | @ | — |

### Old Papers
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| No. 1 Hard White | 3.25 | @ | 3.75 |
| No. 2 Hard White | 2.60 | @ | 2.90 |
| No. 1 Soft White | 2.40 | @ | 2.50 |
| No. 1 Mixed | 1.10 | @ | 1.15 |
| No. 2 Mixed | .85 | @ | .90 |
| Solid Ledger Stock | 2.35 | @ | 2.45 |
| No. 1 Books, Heavy | 1.50 | @ | 1.55 |
| No. 1 Books, Light | — | @ | 1.15 |
| Manila Env. Cuttings | 2.00 | @ | 2.25 |
| No. 1 Old Manila | .90 | @ | 1.00 |
| White Blank News | 1.50 | @ | 1.60 |
| Old Kraft | 1.75 | @ | 1.80 |
| Print Manila | .80 | @ | .90 |
| No. 1 Mixed Paper | .45 | @ | .50 |
| Overissue News | .65 | @ | .70 |
| Old Newspapers | .55 | @ | .57½ |
| Box Board, Chip | .55 | @ | .60 |
| Repacked | .02½ | @ | .03¼ |
| No. 2 | 1.30 | @ | 1.35 |
| No. 3 (Roofing) | 1.15 | @ | 1.25 |
| No. 4 | 1.00 | @ | 1.15 |
| No. 5A | .75 | @ | .85 |
| B | .65 | @ | .75 |
| C | .65 | @ | .75 |

### Bagging
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Gunny No. 1— | | | |
| Foreign | 1.50 | @ | 1.75 |
| Manila Rope— | | | |
| Foreign | — | @ | 4.50 |
| Domestic | — | @ | 4.75 |
| Transmission Rope | 2.00 | @ | 2.25 |
| Mixed Strings | 1.25 | @ | — |
| Jute Wool Strings | 1.00 | @ | 1.05 |
| Jute Carpet Threads | 1.00 | @ | 1.10 |
| Scrap Burlaps | 1.37½ | @ | 1.50 |
| Scrap Sisal | 1.80 | @ | 2.00 |
| Scrap Sisal for shredding | 1.85 | @ | 2.00 |
| Wool Tares, heavy | 1.60 | @ | — |
| New Burlap Cutting | 1.90 | @ | 2.00 |
| Australian Wool Pouches | 3.00 | @ | 3.12½ |

### Domestic Rags (New)
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Shirt Cuttings— | | | |
| New White No. 1 | .09½ | @ | .10 |
| Silesias, No. 1 | .06 | @ | .06¼ |
| New Unbleached | .10 | @ | .10½ |
| Fancy | .04 | @ | .04½ |
| Washable | .04 | @ | .04½ |
| Cottons—According to grades | | | |
| Blue Overalls | .06¼ | @ | .06¾ |
| New Black, soft | .04 | @ | .04¼ |
| Khaki Cuttings | .04 | @ | .04¼ |
| O. D. Khaki | .05 | @ | — |
| Corduroy | .03 | @ | .03½ |
| New Canvas | .08 | @ | .08½ |

### Domestic Rags (Old)
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Canvas | .04½ | @ | — |
| White No. 1— | | | |
| Repacked | 4.75 | @ | 5.25 |
| Miscellaneous | 5.00 | @ | — |
| White No. 2— | | | |
| Repacked | .04½ | @ | .05 |
| Miscellaneous | .03½ | @ | .04 |
| Twos and Blues | 2.75 | @ | 3.00 |
| Thirds and Blues— | | | |
| Repacked | 2.50 | @ | — |
| Miscellaneous | 1.75 | @ | 1.90 |
| Black Stockings | — | @ | 4.00 |
| Roofing Stock— | | | |
| No. 1 | 1.65 | @ | 1.75 |
| No. 2 | 1.45 | @ | 1.55 |
| No. 3 | 1.05 | @ | 1.10 |
| No. 4 | 1.10 | @ | 1.15 |

### Foreign Rags
(F. o. b. Boston)

| | | | |
|---|---|---|---|
| Dark Cottons | 1.55 | @ | 1.57½ |
| New No. 1 Shirt Cuttings | 9.00 | @ | 10.00 |
| Dutch Blues | 2.00 | @ | 2.12½ |
| Lace Curtains | 5.00 | @ | 5.12½ |
| New Checks & Blues | 4.25 | @ | 4.60 |
| Old Fustians | 1.90 | @ | — |
| Old Linsey Garments | 1.80 | @ | 1.85 |

## TORONTO

### Paper
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Bond— | | | |
| No. 1 Sulphite | .12½ | @ | — |
| No. 2 Sulphite | .10¾ | @ | — |
| No. 1 Colored | .13½ | @ | — |
| No. 2 Colored | .11¼ | @ | — |
| Ledgers (sulphite) | — | @ | — |
| Ledgers, No. 1 | .36 | @ | — |
| Ledgers, No. 2 | .27 | @ | — |
| Writing | .09½ | @ | .10 |
| Book— | | | |
| No. 1 M. F. (carloads) | 7.50 | @ | — |
| No. 2 M. F. (carloads) | 7.25 | @ | — |
| No. 3 M. F. (carloads) | 7.00 | @ | — |
| No. 1 S. C. (carloads) | 8.00 | @ | — |
| No. 2 S. C. (carloads) | 7.75 | @ | — |
| No. 3 S. C. (carloads) | 7.50 | @ | — |
| No. 1 Coated and Litho | 13.25 | @ | — |
| No. 2 Coated and Litho | 12.25 | @ | — |
| No. 3 Coated and Litho | 11.50 | @ | — |
| Coated tinted | 14.50 | @ | — |
| Wrapping— | | | |
| Rag Brown | 4.95 | @ | — |
| White Wrap | 5.25 | @ | — |
| "B" Manila | 5.80 | @ | — |
| No. 1 Manila | 6.65 | @ | — |
| Fiber | 6.65 | @ | — |
| Kraft, M. F. | 7.00 | @ | — |
| M. G. | 7.00 | @ | — |

### Pulp
(F. o. b. Mill)

| | | | |
|---|---|---|---|
| Ground Wood | 30.00 | @ | 31.00 |
| Sulphite easy bleaching | 60.00 | @ | — |
| Sulphite news grade | 60.00 | @ | — |
| Sulphite, bleached | 77.00 | @ | — |
| Sulphate | 60.00 | @ | — |

### Old Waste Paper
(In carload lots, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| Shavings— | | | |
| White Env. Cut | 3.00 | @ | — |
| Soft White Book Shavings | 2.85 | @ | — |
| White Blk. News | 1.60 | @ | — |
| Book and Ledger— | | | |
| Flat Magazine and Book Stock (old) | 1.40 | @ | — |
| Light and Crumpled Book Stock | 1.25 | @ | — |
| Ledgers and Writings | 1.50 | @ | — |
| Solid Ledgers | 1.50 | @ | — |
| Manilas— | | | |
| New Manila Cut | 1.50 | @ | — |
| Printed Manilas | 1.00 | @ | — |
| Kraft | 2.25 | @ | — |
| News and Scrap— | | | |
| Strictly Overissue | .85 | @ | — |
| Strictly Folded | .85 | @ | — |
| No. 1 Mixed Paper | .65 | @ | — |

### Domestic Rags
(Price to mills, f. o. b. Toronto)

| | | | |
|---|---|---|---|
| No. 1 White Shirt Cuttings | .10 | @ | .10¼ |
| Fancy Shirt Cuttings | .05½ | @ | — |

(Delivered Toronto)

| | | | |
|---|---|---|---|
| News, per ton— | | | |
| Rolls (contract) | 61.50 | @ | 62.00 |
| Sheets | 67.00 | @ | — |

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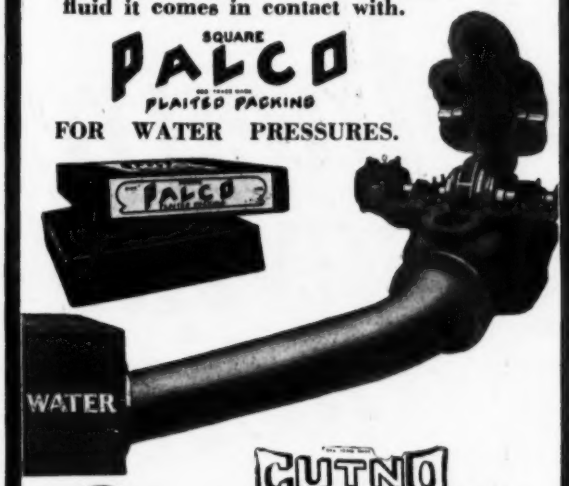


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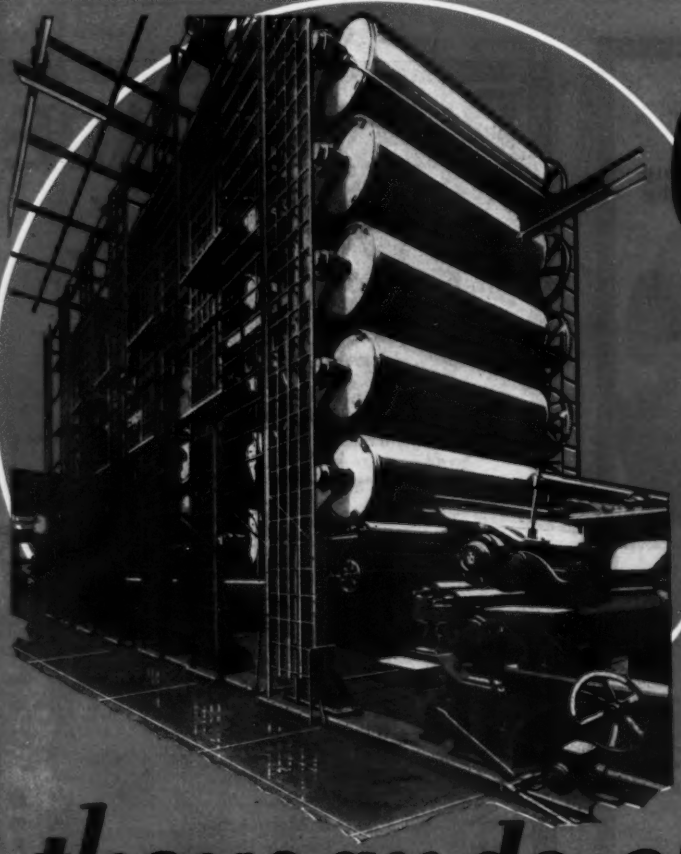

# They're saving their owners thousands of dollars every year —

**Vertical Dryers on all three machines at the Richardson Company, Lockland, Ohio.**

This mill started with a "try-out" installation some twelve years ago. Since then they have equipped all three of their machines with Vertical Dryers. They are operating today with a grand total of 232 rolls in Vertical order.

Obviously the Richardson Company is "sold" on Vertical Dryers—otherwise why would they make them standard equipment on all three of their machines? The answer follows:

They were able to increase their drying capacity without taking over additional floor space.

They were able to eliminate the vapor pockets between the rolls, dry faster, dry more uniformly from edge to edge, and to do it on considerably lower steam pressure.

They were able to save money on their coal bills because of the reduced steam pressure required.

Have us figure on increasing the capacity of your dryer section. The benefits will soon pay the bill.

The Black Clawson Company—Operating Shartle Brothers Machine Co.
HAMILTON, OHIO MIDDLETOWN, OHIO

*Export Offices: 15 Park Row, New York City*

BLACK-CLAWSON